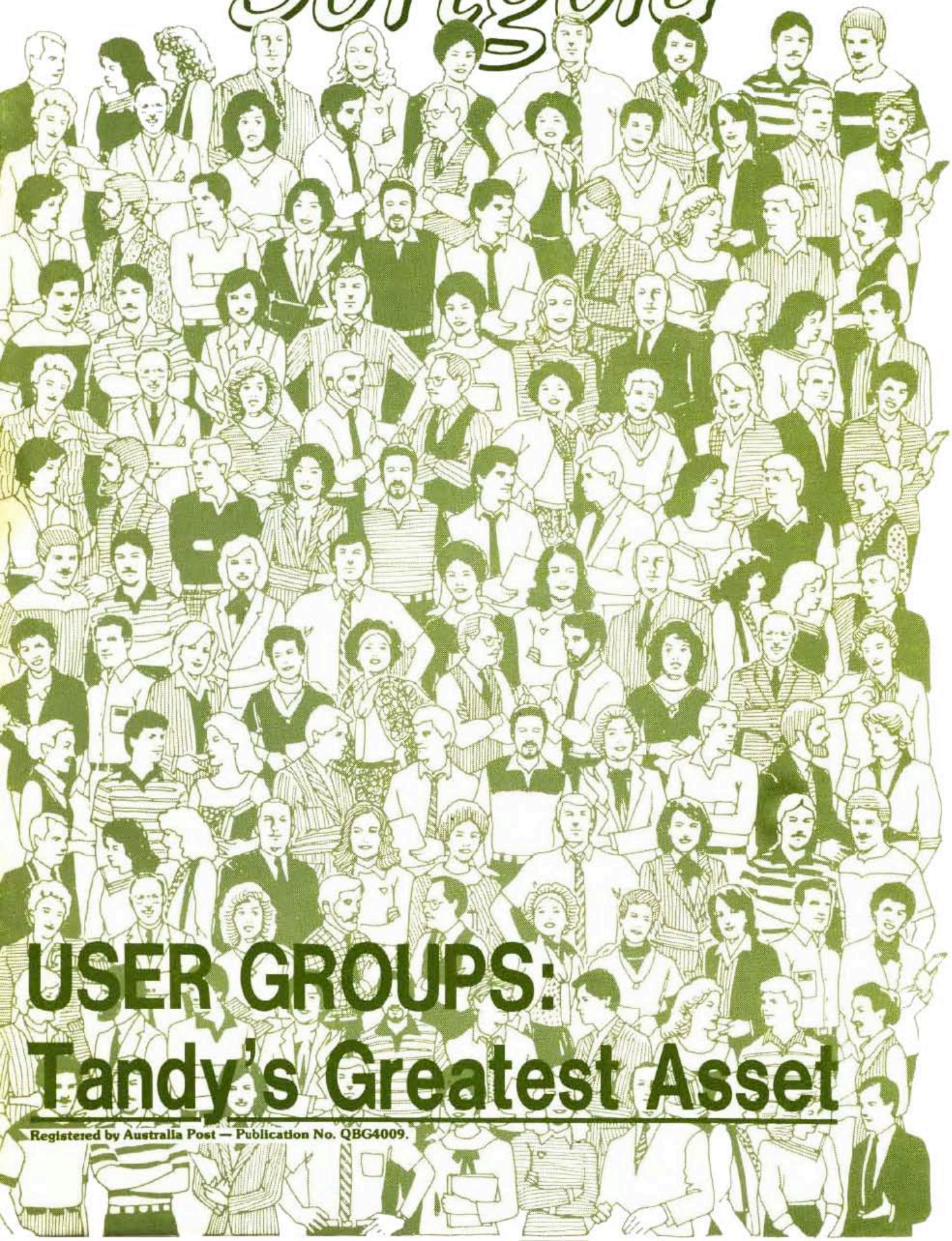
THE Magazine for TANDY Computer Users

JUNE 1987

$4.50

Softgold



USER GROUPS: Tandy's Greatest Asset

Registered by Australia Post — Publication No. QBG4009.

BLAXLAND COMPUTER SERVICES PTY. LTD.

134 GREAT WESTERN HIGHWAY,
BLAXLAND. N.S.W. 2774

TELEPHONE: (047) 39 3903

SUPER SALE

STOCK PURCHASED AT SPECIAL PRICES

6 only CoCo3's $400 ea

6 only Tandy Drives $450 ea

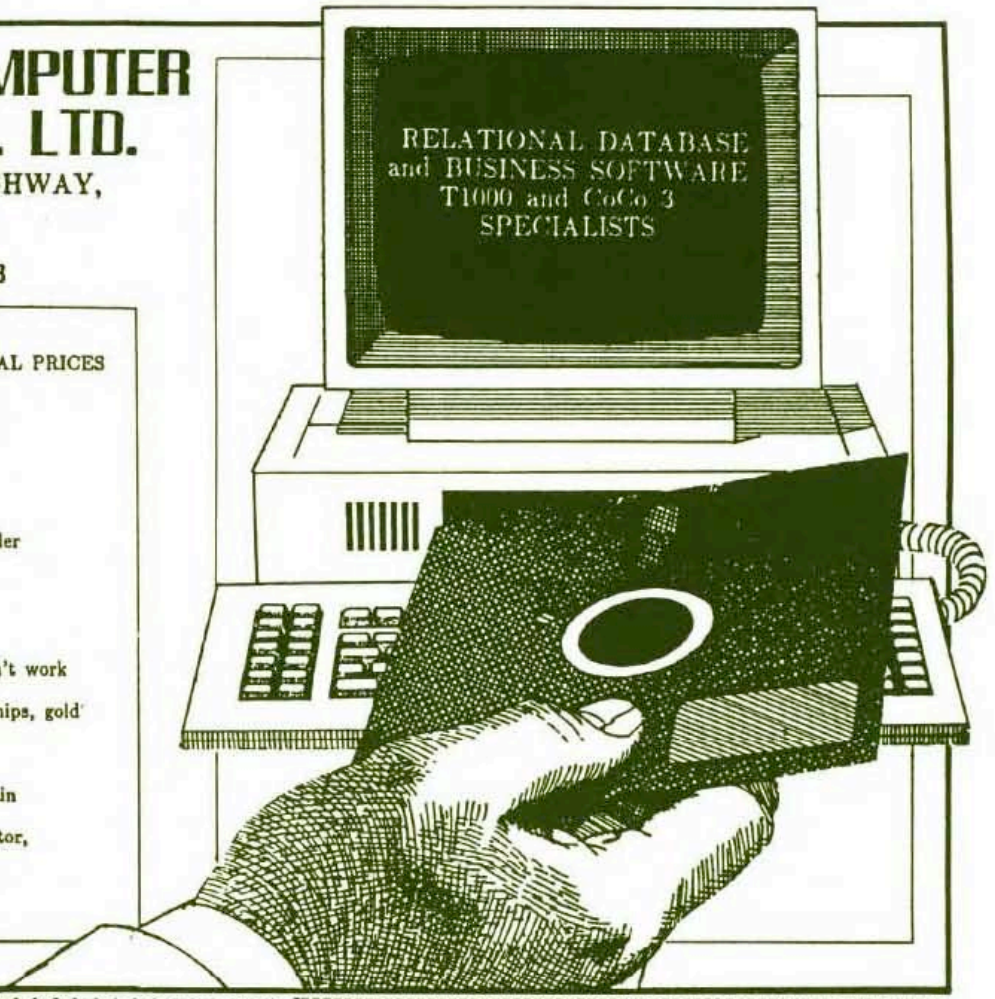
6 only RS232 Packs $160 ea
(for use with OS–9 level 2)

10 Mb Hard drives with controller
for your CoCo2/3 $1299

20 Mb Hard drives $1599

512K upgrades for CoCo3 (won't work loose–premium 120 n/s 256K chips, gold edge contacts.)

$199.00 inc. Disk Public Domain Software– RAM Disk Text Editor, Disassembler, Window Utilities, Coms Software & more!



COLOUR 5¼ DISKETTES

Available in Lavender, Dark Blue Light Blue, Grey, Beige, Pink, Yellow White, Orange, Red, Burgundy, Black Brown and Green.

TOP QUALITY CENTECH BRAND
with LIFETIME WARRANTY

SOLVE the problem of trying to locate your programs....

COLOUR CODING MAKES IT EASIER!

SSDD $23.50 for 10
DSDD $25.00 for 10
(postage free)
Please state colours required

JANDA (AUS)
P.O. BOX 239
MARYBOROUGH Q 4650

106 NEPTUNE STREET (071) 23 1369

PENINSULA MUSIC & ELECRONICS CENTRE

SHOP 54, KARINGAL HUB,
FRANKSTON 3199

Ph (03) 789 7997. AH (059) 75–4790

•••••••

Best Prices on AMIGA Monitors and Data Sheet to suit CoCo 3

•••••••

Specials on Computer Training
4 lessons for the price of 3 !!

•••••••

Best prices on Commodore Hardware

Contact: Michael Monck

* FREE DELIVERY

THE Magazine for TANDY Computer Users
JUNE 1987 $4.50

WHO IS THIS MAGAZINE FOR?

This magazine is for computer users – especially users of Viatel, Tandy Colour Computer users, Tandy MC-10 computers, Tandy 1000 and 2000's and IBM PC's and compatibles.

WHO PROVIDES THE MATERIAL IN THIS MAGAZINE

The readers of this magazine supply the information you will find here. All of it has been volunteered and remains the property of the individual authors.

THE CREW

Publisher: Goldsoft
Magazine Editor: Graham Morphett
Accounts: Annette Morphett
Production: Paul Wynne
Advertising: Graham Morphett
Submissions Editor: Alex. Hartmann

Sub Editors

Assembly Language: John Poxon
MC-10: Jim Rogers
Softgold: Barry Cawley
Forth: John Redmond
OS-9: Jack Fricker

Special Thanks to

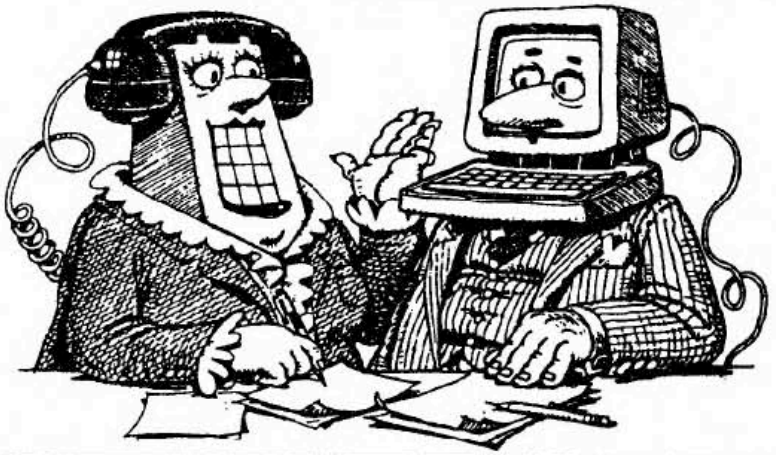
Brian Dougan, Paul Humphries, Alex Hartmann, Michael Horn, Darcy O'Toole, Martha Gritwhistle, Geoff Fiala, John Redmond, Sonya Young and Mike Turk.

Phone: (075) 51 0577 Voice
Deadlines: 7th of the preceding month.
Printed by: Goldsoft
P.O. Box 1742
Southport, Qld. 4215
Registered Publication QBG 4009

This material is COPYRIGHT. Magazine owners may maintain a copy of each programme plus two backups, but may NOT provide others with copies of this magazine in ANY form or media.

AT A GLANCE

Clubroom ..... P 2
The Goldsoft Wishbook ..... P 3
Letters ..... P 4
Dr. CoCo ..... P 7
The Adelaide Easter Bash ...
..... En Passant P 8
Bulletin Boards ..B. Darnton P 9
Goldlink Graffiti ..... P 12
Swan Line ..... S. McCormick P 17
Getting to know the T 1000
..... Jim Rogers P 18
MiCo News ..... Jim Rogers P 19
Simeqn ..... Mal McLaughlan P 19
Aboriginal Art.....
..... Mal McLaughlan P 20
The First Fleet..K. McIntosh P 21
Lotto Number Picker..D. Hill P 21
Crumbling Mental Block .....
..... Johanna Vagg P 22
Guess ..... Harry Hoffman P 23
Conf '87 ..... P 26
Poking Peeking and
Printing .... Johanna Vagg P 28
Snow Flake ....B. Besasparis P 29
Sale of the Century ...
..... David Hill P 30
The Pendant of Death .....
..... Wayne Kely P 34
Addition of a Fraction ...
..... Bob Horne P 39
Australian Bush Songs ....
..... Mal Mclaughlan P 43
Tattslotto Draw...D. McKeand P 44
Mindless Wanderings ...
..... Ivor Davies P 45
Skull .... Steven Lees-Smith P 47
Dr. Micro ..... Tom Lehane P 48
Fireworks ..... Chris Deacon P 50
Kidstuff ..... Johanna Vagg P 51
Specifics ..... Johanna Vagg P 52
If I Were a Rich Man ....
..... Mal McLaughlan P 53
Chinese Checkers...C. Deacon P 54
Square Jig ... Bob Delbourgo P 55
Jigsaw ..... Chris Deacon P 56
Your Story .... C. Threlfall P 57
Graphic One-Liners ....
..... Justin Lipton P 58
Set Numbers ..... David Hill P 59
Cogs ..... Chris Deacon P 59
Echo Song .... Craig Stewart P 59
In Brief ..... P 60
Submitting Your Work ..... P 61
What's on Best of CoCo-oz .. P 62
Subscription Form ..... P 63
User Groups ..... P 64



Clubroom

We're Moving!

Boy! What a month! I can't remember a month in which we've been involved in so much! Its all to do with Ken Allen joining us of course - they always said he made work for people - I'm beginning to understand what they meant!

The important news is that we are moving from the old house we've been in since the year dot to a nice new office.

The street address is 26/207 Currumburra Rd., Ashmore. 4214.

OUR POSTAL ADDRESS REMAINS UNCHANGED.

Unfortunately our phone numbers are changing, and we will not know what these are to be for a little while yet.

Our current numbers will be vetted by Telecom when we move, and we'll have the new numbers on Viatel just as soon as we can get them there! So you should be able to find us without too many problems.

Other changes include new products again this month for the Wishbook, new modems and a whole range of software.

I've been to Sydney twice this month and once separately to Grafton!

We've also been putting some hours into the new software that updates the Bulletin Boards on Viatel.

This software has caused more hassles than I'd like to name, & has been a real problem for us.

Fortunately the project is finally starting to bear fruit - after 6 months - and we've been on line this past month with various working versions (working variously!).

So all in all we've been very busy and it looks like this month is going to be very much more of the same!

Softgold a Sellout Again!

Last month this magazine sold out again, and we had to turn away customers. To them we apologise!

The best way to ensure you get your copy is to subscribe. Failing that, reserve a copy at your local Tandy store, or book one at your local newsagent.

Viatel

The new program which updates the bulletin boards is starting to make its presence felt on the system.

Occasionally it crashes still, but more often than not, it seems to work quite well.

Eventually, it will provide auto updates on a 24 hour basis, with Com Jobs on line at the usual times.

The program updates automatically, and in fact quite quickly, all the boards on our system. By definition therefore it is quite complex - I'm glad most of the hard work is over!

In other Viatel news, the boards have been very active and the bashes have been very many!

At the time of going to press we had a Gross Messaging Contest going again - I'm sure Woodrow has a real chance of winning that one, even if he doesn't try!

Speaking of Bashes, there is a Bash on 13th June on the Gold Coast. It looks like being quite a big one - at this stage we're expecting around 100 people.

Bring your own drink and food, snacks will be provided, but if you want, we can fire up the BBQ for your food.

Phone 075 51 0577 for final details.

Conf '87

Well, its only a month or two to Conference everyone - so come on, let us know what you intend doing!

We have quite a few bookings already, but we don't have sufficient to justify hiring a bus from Brisbane as discussed last month.

Conference will be great! We have some very exciting things to show you, including we hope, a midi interface and a music synthesiser!

There'll also be some of the things you've perhaps only heard of - OS-9 Level 2, the hard drives for the Colour Computer, new software for the CoCo 3 - and CoCo 2, the CoCoConnection, T1000, T3000 soft and hardware - and most of all, tutorials galore to help you get the best out of your computer!

Special This Month

Some of you have complained that the mags are getting expensive.

Here's your chance to put your money where your mouth is!

This month, if you ask for it, you get 12 months of Australian CoCo for just $32.00!

That's just $2.67 per magazine - not bad eh?

New Lines.

The big excitment this month is the addition to our range of the Craftwork series of software for the T1000/IBM PC series of computers.

For just $99.00, you can purchase a total package for a retail, professional, motor trade or rental business.

The packages are based on the very neat Omnus 3 database package which is written in 4GL and which is also available through us.

The great thing about the Craftware packages is that as your business grows, they can be economically changed to meet your own needs.

This is achieved either by purchasing Omnus 3 yourself and modifying the Craftware package utilising the Omnus 3 software, or you can return the Craftware software to us, and we will do your mods for you - at reasonable rates of course!

The Tandy Store Award.

The store at Ipswich has been noted before as being a friendly meeting place for Tandy computer users in the area.

The staff there have gone out of their ways over the years to ensure that the people of Ipswich get top service.

Congratulations to Ipswich Tandy, keep up the great work!

the GOLDSOFT WISHBOOK

The Goldsoft Wishbook

The following products are available on order from us.

To order, contact us by phone Viatel or letter, giving your name, address, phone number and credit card number, as well as the Item # shown beside the product as listed below.

All items include post and packing.

CoCo Hardware

Item #	Description	Cost
B 001	512K upgrade kit for CoCo 3 owners	$199.00
B 002	10 Mb Hard drive inc software	$1299.00
B 003	Coming! CoCoNet! Networking extrodinaire!	TBA
G 001	The CoCoConnection - Use your CoCo to control models, alarms - anything electrical	$206.00
G 002	Video Amplifier with sound - attach your CoCo 1 or 2 to a Video monitor	$35.00
G 003	The Probe - A temperature sensing unit you plugin to the joy stick port.	$49.95
G 004	64K Upgrade Kit - upgrade your CoCo2's memory to 64K!	$55.00

CoCo Software

B 1001	The Wiz! The ultimate OS-9 L2 Comm package! Multi Windowing, VT52 Emulator, 300-19200 baud, RS 232 protocol	$159.00
B 1002	IMS - Relational Data Base written in 4GL & VERY fast! OS-9 L2	$299.00
G 1001	Say the Wordz - two Curriculum based speller programs for your Tandy Speech / Sound Pack (32K ECB)	$29.95

The CoCo 3 Tape/Disk

G 1002	# 1	$16.00
G 1003	# 2	$16.00
G 1004	# 3	$16.00

The Best of CoCoOz

G 1005	# 1 Education	$16.00
G 1006	# 2 Part 1 16K Games	$16.00
G 1007	# 2 Part 2 32K Games	$16.00
G 1008	# 3 Utilities	$16.00
G 1009	# 4 Business	$16.00
G 1010	# 5 Adventure Games	$16.00
G 1011	# 6 Preschool Edn	$16.00
G 1012	# 7 Graphics	$16.00
G 1013	# 8 16K Games	$16.00
G 1014	# 9 32K Games	$16.00
G 1015	#10 Education	$16.00
G 1016	#11 Education (Disk only)	$16.00

Tandy and IBM PC Hardware

Item #	Description	Cost
Q 001	Colour Monitor (DTX 2001)	$680.00
Q 002	Mono Monitor	$190.00
Q 003	Mouse	$90.00
Q 004	80286 Speed Card	$550.00

Tandy and IBM PC Software

Business

Item #	Description	Cost
Q 1001	dBase II	$1043.00
Q 1002	dBase III	$1470.00
Q 1003	Sidekick	$215.00
Q 1004	Turbo Pascal 8087	$261.00
Q 1005	Turbo Pascal BCD & 8087	$244.00
Q 1006	Crosstalk	$306.00
Q 1007	Lotus 123	$1054.00
Q 1008	Wordstar 2000+	$927.00
Z 2001	Webster's New World Writer	$249.00
Z 2002	Webster's Spelling Checker	$89.95
Z 2003	Webster's Thesaurus	$89.95
Z 2004	Windowword	$269.00
Z 2005	Ready	$99.00
Z 2006	Thinktank	$385.00

CAD Packages

Item #	Description	Cost
Z 2007	TURBOCAD (V 1.4)	$399.00

Trade Business Packages

Item #	Description	Cost
Z 2008	The Motor Trade Package	$99.00
Z 2009	The Professional's Pack	$99.00
Z 2010	The Retailer's Package	$99.00
Z 2011	The Rental Package	$99.00

Accounting

Item #	Description	Cost
Z 2012	Asset Manager	$1170.00
Z 2013	Cash Desk/Finance Desk	$399.00
Z 2014	System 4	$645.00
Z 2015	C.P.A. Plus	$395.00

Databases

Item #	Description	Cost
Z 2016	Omnus3 IBM-Single user (Multi user versions are available)	$495.00

Spreadsheets

Item #	Description	Cost
Z 2017	Logistix	$399.00

Fun

Item #	Description	Cost
Q 1020	Ancient Art of War	$96.00
Q 1021	Print Shop	$119.00
Q 1022	Gato	$68.00
Q 1023	Sargon III	$96.00
Q 1024	Zork I	$79.00
Q 1025	Zork II	$79.00
Q 1026	Zork III	$79.00
Q 1027	Trinity	$79.00
Q 1028	Ballyhoo	$79.00
Q 1029	Hitch Hicker's Guide to the Galaxy	$79.00
Q 1030	Crossword Magic	$68.00
Q 1031	The American Challenge	$68.00
Q 1032	Balance of Power	$89.00
Q 1033	Racter	$79.00
Q 1034	Jet	$114.00
Q 1035	Moonmist	$79.00
Q 1036	Shanghai	$68.00
Q 1037	Championship Golf	$89.00
Q 1038	Borrowed Time	$68.00
Z 2018	The Great International Paper Airplane Construction kit	$49.95
Z 2019	Star Trek	$49.95
Z 2020	Championship Boxing	$69.95
Z 2021	Ultima II	$69.95
Z 2022	Decision in the Desert	$69.95
Z 2023	F-15 Strike Eagle	$69.95
Z 2024	Kings Quest	$69.95
Z 2025	Mean 18	$69.95
Z 2026	Boulderdash	$49.95
Z 2027	Boulderdash II	$49.95
Z 2028	Conflict in Vietnam	$69.95
Z 2029	Dambusters	$69.95
Z 2030	Kings Quest II	$69.95
Z 2031	PSI-5 Trading Company	$69.95
Z 2032	Silent Service	$69.95
Z 2033	Solo Flight	$69.95
Z 2035	Star Fleet	$59.95

Education

Item #	Description	Cost
Z 2036	Chem Lab	$69.95
Z 2037	Creature Creator	$59.95
Z 2038	Crypto Cube	$59.95
Z 2039	Decimal Dungeon	$49.95
Z 2040	Donald Duck's Playground	$59.95
Z 2041	European Nations and Locations	$59.95
Z 2042	Fraction Action	$49.95
Z 2043	Math Maze	$59.95
Z 2044	Mickey's Space Adventure	$69.95
Z 2045	Mission Algebra	$59.95
Z 2046	Race Car 'Rithmatic	$49.95
Z 2047	Remember!	$89.95
Z 2048	Ships Ahoy	$59.95
Z 2049	Spellagraph	$59.95
Z 2050	Spellakazam	$59.95
Z 2051	Spellicopter	$59.95
Z 2052	Ten Little Robots	$49.95
Z 2053	Winnie The Pooh in the 100 Acre Wood	$69.95

Specials!

Item #	Description	Cost
Q 1050	Side Print	$72.00

Miscellaneous Items

Item #	Description	Cost
G 2001	Box of 10 DSDD Disks 10 Boxes plus (per box)	$19.00 $16.10
G 2002	Blank C30 Cassettes 12 Cassettes	$2.00 $18.00
G 2003	Tape cases, 12 for	$5.00
G 2004	Help - Manual for CoCo	$9.95

Modems

Item #	Description	Cost
D 001	Manual 1200/75 baud plus 300/300 modem	$240.00
D 002	IBM Half Card 1200/75 & 300/300 (Auto dial - auto answer)	$370.00
D 003	Desktop 1200/75 & 300 /300 baud modem (Auto dial - auto answer)	$425.00

Terminal Programs

Item #	Description	Cost
G 1017	CoCoTex - Videotex pac (Viatel) for all CoCos	$79.95
G 1018	Vtex 2 - Videotex pac for IBM Compatibles	$225.00
G 1019	Supertex 2 for Amiga & Atari 520 ST (specify)	$99.95

Modems/Software/Cable

Item #	Description	Cost
G 005	CoCoTex with cable and manual modem	$289.00
G 006	CoCoTex with cable and auto dial modem	$451.00
G 007	Vtex 2 with cable and manual modem	$385.00
G 008	Vtex 2 with half card auto modem	$555.00
G 009	Vtex 2 with desktop auto modem and cable	$720.00

Feedback

NEED HELP? Write to Graham, to Dr CoCo or leave a message on Viatel and we'll do our best to answer your enquiry in these columns as soon as possible.

LETTERS

Dear Graham,

I would like to make enquiries about a project which was featured in the January and February editions of Australian Rainbow.

The project was the CoCo ROS which was designed and written by a Mr D. Wiede.

In the above mentioned magazine he described how to build and test the CoCo ROS, and was going to describe how to do some programs for the CoCo ROS in part three of his article which was going to be in the March edition of Rainbow.

But since Rainbow has changed names to Australian CoCo, I wonder if you are going to publish part three which was destined for Rainbow?

As I notice in your last two editions March and April, there is no mention of the CoCo ROS.

Hope to hear from you soon,
A.R.Sterlinl
Lundea, NSW

Dear Mr A.R.Sterlinl,

Unfortunately due to our break with Falsoft Inc, we are unable to publish the third part in the series. However, you can obtain a copy of April's American Rainbow from Paris Radio in Sydney.

Graham.

*

Dear Graham,

I recently came across an article in the March 1986 Rainbow issue called "The Secret to Loading those Double Speed Cassettes" by Craig Carmichael. After reading the article I wondered if it was possible to (C)SAVE the programs on the CoCo 3 with the POKE65497,0 and CLOAD them back in at high speed.

So after about 15 minutes of searching and trailing I stumbled upon a way to load a program saved at high speed on the CoCo 3.

I do not know if this is common knowledge but I wish to share my information with those of you who don't know. I have found that POKEing 7, 8 or 9 in location 145 permits the loading of high speed programs, CSAVED with POKE65497,0 in operation. The reason that I said 7, 8 or 9 is because of the speed differences in tape recorders.

The values vary. I have found these values successful with my system. If you have difficulty in loading your programs, then try POKEing some low values in locations 143 and 144. I have found high speed CSAVEing and CLOADing very useful as it reduces the time taken in loading programs dramatically. I am not sure if high-speed saving on the CoCo 3 is triple the normal rate but I suspect it is.

The procedure is as follows:

- When you are ready to save your program:
    1. POKE65497,0
    2. CSAVE"filename"

That's the easy part. Now to CLOAD the program back into the CoCo 3:

1. POKE65497,0
2. POKE145,7 (or 8 or 9)
3. CLOAD

You'll be surprised how quickly the CLOADing cursor flashes when you load a program. Who wants a disk drive??

Any queiries can be posted to
14 Wilkins St,
Glengowrie, 5044
Please include SASE.

Eric Morot
Glengowrie, SA.

Eric,

I always have preferred to use cassette for valuable program backup and, with this news, it seems you have found the way to make the operation viable.

Graham

*

Dear Graham

I have just been reading the letter from Neville Hoad in the September issue of the Dr. CoCo column. I have been using my CoCo 2 mainly for word processing using a Brother CE 50 daisy wheel typewriter interfaced to the computer for 18 months now with great success. I use the Telewriter-64 word processing program. I recently bought a Brother M-1109 printer to enable me to utilize my computer for graphics as well.

I was in for a great shock. Not the simple attachment of printer to computer through interface as for my original typewriter and instant usage but horror of horrors I couldn't get it to work. I live in a very isolated town far, far from user groups, help and encouragement.

It took me 10 days to get the printer to function correctly and I learnt more about my computer and programming in those 10 days than in all of the previous 18 months.

Note: it was not the printer's fault because as you can see it now works e-x-c-e-l-l-e-n-t-l-y, but my ignorance.

Consequentially I was wondering if CoCo could include some tutoring columns of functions of printers, articles on different types of printers, and what sort of programs are required to get them to work successfully.

I noticed that Dr CoCo advised that a serial to parallel interface could be required but in fact a Brother M1109 printer has connectors for both parallel and serial interfaces.

Another serious problem I encountered was that Telewriter 64's instructions were not very clear especially with regard to the printer. It was only after some very, very thorough searching that I finally saw a printer example in a hidden spot in the booklet which was a wonderful breakthrough.

Although I now know how to print letters well with the printer (I am still at a loss as to what the 'm' means in the decimal codes and I'm only half-way to being able to use any codes which include an 'n'), but I bought this printer to be able to do graphics and I'm no better off. I haven't a clue as to which program (at least I now know I need a program, I think) to get to enable me to print graphics. I have no access to an informative person. Our nearest user group being in Darwin over 1000km's away. Do I require special programs or do I need to include special instructions into a special dump to printer?

Why don't graphics programs in CoCo state which printer they used as I have tried to run some of the drawing programs with graphic dumps included and they just print rubbish. In short,

H E L P ! ! ! !

Will I ever be able to print a picture with my printer?

After a bit of reading and consultation with the people from whom I purchased my printer (500km's away) I know that the dip switches are best in the position of:

DIP SW 1: 1-off, 2-on, 3-on, 4-on, 5-on, 6-off, 7-on, 8-on, 9-off, 10-off

DIP SW 2: 1-on, 2-on, 3-off, 4-off, 5-off, 6-on, 7-on, 8-on, 9-on, 10-on.

Perhaps that information may be helpful to somebody.

As you can see I am a very confused beginner and the short of my story is that I really need to know which and where to get a graphics program which will work with my M-1109 printer and CoCo with good instructions on how to work it. Can anyone help?

Di Souphandavong
Tennant Creek

Ps, I love my CoCo - it is the best thing out since sliced bread. Thank you for the CoCo magazine as it is an invaluable help to us here in isolation.

PPS, I'm feeling particularly ignorant and embarrassed - I did learn BASIC programming years ago (in the days of punching and feeding cards into monstrous computers) but I have forgotten most of it now so if this letter sounds ridiculous, I apologize.

Di,

One of the reasons we have this magazine is to attempt to get good advice to new users like yourself before they spend money on items which may otherwise create problems for them.

A suitable graphics program for you would be CoCoMax 2, which is avialble from Peter Collison at Computerware For Micros in Adelaide (ph. 08 336-6588).

I can't guarentee that your printer will work with this program but then I don't believe I've seen a program which specifically dumps to that printer. Perhaps some of our 'Brother' users can advise.

Please don't ever feel embarrassed about writing to us for information - that's what we're here for.

Graham.

*

Dear Graham,

In my last letter I asked about "Draughts", but now have found a mistake in my typing (I proof read it three times!) and now it works OK. However, it does not alternate turns between colours and does not come to a stop when the game has ended.

The April magazine is very good indeed - congratulations! I still use the Mico as well as the 64K CoCo, so was pleased to see some good short programs for it, too!

CoCo Music is very good. However it was printed in CoCo of November '86, and the introduction there was fairly good, while the introduction now is not correct. It needs to be pointed out that notes are sharpened (apart from 'E' and 'B') by pressing the SHIFT key. Is there any way in which the CoCo can be induced to play chords? Or are we stuck with one note at a time? And what alteration would be needed to make a note sound while the key is being pressed, rather than for a fixed interval?

I shall await your advice about a suitable Database for my purposes. I would need a card index of people/families, with room for membership details and positions held, etc.

I was also very interested to see that more than one program can be held in Mico's memory. I haven't yet had the time to try it.

Congratulations again on a good magazine, apart from Eggemon, which seems quite inane, all the junk in Com*Station 642, and the photos which mean little to me. There is some space for extra programs or hints in these spots. Best wishes.

Rev. John Ford
Junee, NSW

John,

If you proof read three times, and still have errors, then I'm not quite so embarressed by the errors which occur in the magazine from time to time.

As for help with your music questions, I am not in a position to be able to assist you, so we will have to ask our readers for their assistance.

I appreciate your comments regarding the material from the 'Viatellians', however also appreciate that they say the same thing about some of the stuff you like in the magazine.

A suitable database for your purposes can be found in the "Best of CoCoOz # 4 - Business". In fact, there are two databases there, one for a tape system, and another for a disk system.

Either should meet the needs of a minister.

Graham.

*

Dear Graham,

The time has come! It's been interesting - the changes and vast improvement over the last couple of years. I must be one of Father Greg's original subscribers almost! My magazines go back to '82 and the tapes to the very first ones out.

I still have the original old grey case CoCo's upgraded to 64K with all accessories. The quality of programs and content are an inspiration to everyone and a credit to your team.

Once more even though you don't hear much from me I really look forward to your magazine each month and admire the work that goes into its preparation.

Adrian Jowett

Adrian,

Thanks Adrian, it's been a lot of work, but it's a lot of fun!

Graham.

*

Dear Graham,

I have been a faithful Australian CoCo reader since Volume one number one and have found this great magazine to be of untold value.

I compliment you and the team on such an outstanding magazine. But now that this magazine has been changed to Softgold, I have a few questions.

1) Does this magazine get numbered Vol 3 number 7 as a continuation from Australian CoCo or does it start from Volume 1 once again and ..

2) What has happened to "Scoreboard"? Has this unique feature of the magazine been pushed aside in favour of something else or are you waiting for a free page to pounce on? And ...

3) If "Scoreboard" is to be continued, will it still comprise of Mico top scores as well?

David Hill

David,

Australian CoCo magazine changed content but retains its volume series numbers.

Softgold will feature "Player One" instead of "Scoreboard" from time to time.

Unfortunately, Maurice Phillips who is the editor of that section, tells me that he has not got much in the way of input. So if you've been scoring well lately, please let him know.

"Player One" is for all our readers regardless of which computer they own. So even if you own a (dare I say it) Commodore we are happy to show the world how good you are!

Graham.

*

Dear Graham,

My name is John Archer and I have just seen your latest magazine with my article on page 37.

I do not appreciate having my articles butchered by you or anyone else. I do not mind having them gramatically altered but NOT butchered and STUPID comments added.

The first point is your opening statement.

'The opinions expressed in this article are not those of the publishers of this magazine'.

As no opinions were expressed in the article, only the overview of the history of the public domain system, this gave the article as a whole a 'NON SANCTIONED' feel.

Point 2 is your adding of '(Bull! G.)' to the end of the paragraph about copy protection. Do you deny that copy protection inconveniences the honest user? I can prove to you it is not a major hassle for the pirate!

Point 3 is your added comment of '(Ha! G.)' at the end of the paragraph about payment. Well you may be one of those small minded people who will not give someone a fair price for a fair product, but fortunately YOU are not in the majority.

I must admit to being very pessimistic about ever seeing this printed in your magazine or alternatively having the wrong you have done put right.

However for the sake of being fair I will purchase the May 87 edition of your magazine, to see if you have done anything about attempting to correct the above mentioned points.

If you have not you may rest assured that I will no longer purchase your magazine from my local newsagent and I will also not write any more articles for your magazine.

I would expect after the amount of articles I have written for your magazine a little more consideration, particularly in the light that the only reason I wrote for you instead of writing for a magazine where I get paid and not butchered, is because of my good friend, Barry Cawley. But there are limits of what I will do for a friendship.

The ball is in your court!

John Archer.

Dear John,

Firstly I agree with you, I probably over-reacted against your article. However, with piracy rampant in the community, and the words "Public Domain Software" having come to have such a broad meaning, I have been very concerned of late to encourage people to think very carefully about this issue.

I also appreciate the work that you have done for our magazine over the time that you have been involved with it and feel the contribution you have made has been a most valuable one.

I also accept that reputable suppliers of Public Domain Software such as Barry Cawley's Quality Computer Services do an excellent job for the computer user and should be encouraged at all times by the users.

However, I disagree with your statement regarding payment and I disagree of your statement regarding copy protection.

Especially in a increasingly standardised computer world, ie where there are more and more IBM clones around, the temptation to steal software is becoming very great and although copy protection can be an inconvenience it is one of the few sure protections that the author has.

I must admit that I prefer password protection rather than protection of the disk. However I certainly understand and defend anyone who provides disk protection.

People in our society these days just don't seem to want to be honest when it comes to software and whilst I agree that the capable programmer may well be able to break into many protection systems, the majority of users are not THAT capable and so we still have a safer market place from the author's point of view if the unit is protected rather than not protected.

But again this is my opinion only, and I recognise your right to your opinion.

Your article discussed one form of Public Domain Software - which is a distributed form of Public Domain Software which seems to be an honest attempt to get quality software to the people at a reasonable price. With this we have no argument.

However, there are a number of unscrupulous dealers within the community who are importing from Singapore and Taiwan, copies of commercial software worth thousands of dollars here in Australia, and in many cases selling them for less than $50.

Fortunately, the owners of that software are slowly catching up with the importers and making their point in court.

I am sorry that I reacted the way I did against what you were saying, because what you were saying was basically correct in its context. However we will never support anyone who distributes or encourages distribution of stolen software.

Graham

Dear Dr CoCo,

I recently experienced an "OS error" (Out of String space error) whilst programming. This type of error has never occured in my work before, so I am at a loss as to how to deal with it

Could you please help?

David Hill

Oakville, NSW

Dear David,

When you startm up a CoCo or an MC-10, BASIC will reserve 200 bytes of string storage space. Therefore when you assign a string to something (or a group of strings to something), the length of that string (or the combined length of those strings) must not go over 200 bytes, otherwise an OS error will occur.

The best way to combat this problem is to locate a CLEAR statement higher than what BASIC sets in the beginning of the program. In your case try CLEAR 500.

If the problem still persists, increase the size of your CLEAR statement by 200 bytes, ie add 200 bytes onto the last value of your CLEAR statement.

*

Dear Dr CoCo,

I have a late model grey case Colour Computer and a BMC BX80 printer. Recently I changed from tape to disk (CFM Panasonic Drive 0 with BDOS). Using a Tandy Multipak Interface, CoCoMax (V 50315) is a very useful program.

The only problem is that the hard copy produced on my printer does not use the full width of the paper (in fact only about 3/4 the width of the paper is used).

This results in circles being printed as ovals and crowded alphanumerics.

Could you or your readers tell me if this is what normally occurs with CoCoMax or is there some way to configure the printer to get a full width "unsqueezed" hardcopy.

Yours gratefully,

Steve Tatham.

Dear Steve,

There could be quite a few answers to your small problem. One of them is that you could put your printer into elongation mode - that way anything printed will be twice the length (it doesn't really solve the problem, but it's an idea).

Another way is to reconfigure your CoCoMax to run under a different printer.

For example, did you know that the LP VIII and the DMP130 are essentially the same printer? The idea here is if the DMP130 printer isn't listed in your configuration program, the LP VIII is. So you use the LP VIII fomat to use on your DMP130.

Therefore you could try to configure your CoCoMax with the idea of using a different printer configuration to replace your BMC BX80 printer.

Hope that helps.

*

Dear Dr CoCo,

In October 1986 my daughter and I typed in "Rockfall" by T.J.Davies and can not get it to run. I have had the program checked by the user group and still no joy. Line 6 and 62 seem to point to a machine language program which is not there.

Is it possible for you to check that for me or would you be able to give me the address of Mr Davies please.

I have been waiting for a "correction" section in a later magazine but it looks like we are the only ones who typed it in.

Look forward to hearing from you whenever you get aa spare minute.

Have a nice day.

Gordon Albert

Tamworth, NSW

Dear Gordon,

I have run the program here in the office and it seems to run well. The 'machine language program that isn't there' is actually already there - it's in the RAM of the CoCo. So that eliminates that problem.

I can't offer any real help, mainly because I don't know enough of the situation, ie what exactly it does (or doesn't) do, what errors appear, and so forth.

We are not in the situation of giving peoples' adresses' away, but if you send your letter to us, we will forward it to Mr Davies.

Dear Dr CoCo,

I have a Tandy Color Computer2. I recently tried to program the "Gopher" game (Steve Youngberry; September 1986 CoCo).

When I tried to run it I got an FC error in line 17. I have checked it over and over but to no avail. Can you help me?

D.A.Hall

Paralowie, SA

Dear D.A.,

It sounds like the cause of the FC error is located elsewhere, and, by looking at the line, it appears the error stems from the GET command contained inside the line.

The requirements for a GET command is that you have to give it enough space to GET the rectangle. -

In this case go to line 13 and increase the size of each double dimension AND save memory at the same time. Retype the beginning of line 13 like this ...

13 DIM F(15), GG(7), MM(7), CC(7):T1$=" ...

... and continue the rest of the line from there.

*

Dear Dr CoCo,

I have an old grey case CoCo, Tape recorder, disk drive (40 track single sided), CPA-80 printer and my problem is with the drive.

The controller is a J&M without a switchable ROM. I have chips for both RS DOS and JDOS ... now for the curly bit ...

Is it possible to put either system on disk and be able to use them instead of changing chips all the time?

Ian Blackburn

Dear Ian,

Yes, you can go about that system. But there is a much faster and better way to go about it.

I notice that your controller isn't switchable ... well why not make it a switchable DOS? It is possible and doesn't cost much at all.

I can't give you any technical details here, but I know someone who does. Get in contact with Colin North on (07) 824 2128 and ask him re the switchable DOS.

THE BADELAIDE EASTER H

by En Passant

The original idea was for a few people to come over for the weekend. The gathering became much larger, as you will read.

It all began on the 19th April when Wombat arrived from Melbourne on his motorbike. Joined by Daze on the Thursday, the festivities had begun.

Early Friday morning saw a small group; Dessip and Jackal (our hosts for the weekend), Wombat, Mopar and me filling in crosswords, sending a few messages on Viatel and enjoying the odd drink while awaiting the arrival of the many.

At 3.00am, the doorbell rang. There was a race from within and in they came. A quiet night had become instant party time!! Solitaire, Batrag and Wino boasting of "leaving the others for dead" on the highway were followed by Manticore, Eddorean, Leisa, Maltese Sparrow (whose ears were ringing from abuse about his extra high, high beam), Beetz, Louisa, Yakka II and Wozzie. With still more arriving that day, Nodonn Battlemaster, Tuatha and the trio from NSW, Ron J Coyote, Hippo and Lindsay.

All was ready now for the main event on Saturday night - a bus trip around Adelaide. At 4.00pm the driver had arrived and as we boarded the bus, a few "extras" from the club joined us. First stop: the Casino.

We arrived just in time for "happy hour"! We had a few drinks, a quick tour around, and a bit of a flutter. An hour or so later we emerged again. With only a few having suffered from wallet failure, we made a few trips in the Pop-eye. (I think it is a boat! -G.)

A normally peaceful trip down the Torrens turned into a raucous event. The couple embracing on the banks will long remember the cheers, applause and laughter ringing in their ears. So too, the canoist and the jogger (who overtook the boat).

Feeling a little hungry after the gruelling 35 minute cruise, we headed for the pie-cart. A slightly bewildered driver left us to our tea. Only a few were game enough the try the "Goumet Special" - a pie floater. Those who were unsure had their decision made for them after seeing Wozzie with his take-away. Of course the offer (threat) of a regurgated delight for supper may have had something to do with it!

On the bus again, and off to a great little pub in northern Adelaide, the "Old Lion". Here we were greeted by the Easter Bunny with his chocolate eggs. A pleasant surprise. Some tried the home-brew, others stuck to their regular drinks, and all had a hand in re-arranging the seating. Then in a much lighter frame of mind, we made our way back to the city to the "Duke of York" hotel.

A graffix fix was on offer here as those suffering from lack of computer screen soon found the arcade games. Music was on the go too, when the juke-box was found and put to good use. While all this was going on, the lone waitress was left to fix the drinks. Noone really wanted to leave, but we did and this time we went to the "Earl of Aberdeen" hotel.

While travelling, we had started a sing-along in the bus. It was no wonder the the manager had a slightly worried look about him as we entered the pub singing the "Brady Bunch" theme. Given that the room was crowded, we formed a human "train" and danced our way around to the vacant space at the other end of the room. Some of the group actually found enough room on the floor space to sit down in a circle and play a skulling game. This ended soon after someone's drink went west, the echo after being "I don't know them", "they didn't come with us"!!

The "Earl of Aberdeen" was the last of the city pubs. We left there (to the delight of all), singing "Happy little Vegemites"

as we boarded the bus and made our way to the Glenelg Football Club.

On the way, more songs were in order, the most prominent being "Old McDonald had a Farm". No-one was left out, not even the driver, who scored his VROOM VROOM. Some of the "sounds" were unrepeatable, and definitely the unprintable!

Anyway, off the bus for the last time, to dance, laugh and cheer the night away for the few hours left before closing time.

At about 1.00pm we walked (staggered) back to the Jackal's to continue the partying. The Easter Bunny appeared with a basket full of goodies (thanks Hippo) and so ended a fantastic evening enjoyed by all.

Of course Saturday night wasn't the only event of the weekend.

Gypsy Rover, Greenwood, Sunny, Absent, Fiona and Hordak called in at different times to meet everyone and join in on the fun.

We had "world record attempts" at sleeping bag cramming, visits to the Magic Mountain and Downtown leisure centres. Tennis on Sunday afternoon for the super-active. Some just relaxed out in the sun or went for a swim in the pool and enjoyed the cullinary efforts of Jackal and Dessip.

No-one will forget Sunday night at the movies. We went to see "Little Shop of Horrors" in the city and were subjected to Nodonn's cocktail making when we returned (the worst of which being the concoction that he and Daze devised).

There was really no end to it at all, until departure time - uuuhrg!

On Easter Monday we said goodbye to most who had made the trip across. Those who were left, departed one-by-one during the week until finally eerie silence overcame the Bath St residence when Louisa left on Anzac Day.

On behalf of everyone, I would like to thank Sue and Ray (Dessip and Jackal) for making the weekend the success it was and remind them of a few words pasted on a ransom note ... "we shall return"!

En Passant

○

BULLETIN BOARDS

by Barry Darnton

Before discussing Bulletin Boards I would like to briefly describe for those that don't know, what equipment one would need for contacting a Bulletin Board.

MODEM: A modem is a hardware device that connects to your computer through an RS-232 interface and converts incoming analog signals into digital signals that your computer can read, and reconverts digital signals from the computer to analog signals suitable for transmission over a phone line.

TERMINAL PROGRAM: A terminal program is a program that reads the signals from the modem and transfers them to readable characters on your terminal screen. This program also transfers characters that you enter at the keyboard to the modem.

FULL DUPLEX: A mode of communications that allows two systems to simultaneously transmit and receive two different sets of signals.

SYSOP: System operator. This is the person who runs the bulletin board and generally maintains the system's files, message base and grants user access to the system. In most cases the system operator is usually the person who owns the system.

The first question I get asked when talking to people at work, computer meetings or any other place where the subject of computers comes up is, "What is a bulletin board"?

Quite simply a bulletin board is just an electronic post office run by a computer. Each person on the bulletin board is given a mailbox that they can look into anytime to see if they have any mail waiting.

These mailboxes differ to the ones at your house in that they have no numbers, they are addressed by your name and only you can read any mail in that box. Mailbox is not generally used on bulletin boards, they are known as "SECTIONS", and this is the term that will be used in the rest of this article.

The following is a list of sections that my bulletin board has and what the sections are used for.

Section	Name	class	Use	Description
0	Comments	Private	messages	User comments
1	General Mail	Public	Messages	General discussions
2	For sale	Public	Messages	Items for sale
3	Brain Teasers	Public	Messages	Trick questions
4	Private Mail	Private	Messages	Private discussions
5	Adventure	Public	messages	Hints for adv games
6	Jokes & Fun	Public	Messages	Just for a laugh
7	Other Systems	Public	Msgs/Files	Non Coco Section
8	Coco RS-DOS	Public	Files	Coco U/D Section
9	OS9 S.I.G	R/A	Msgs/Files	OS9 Users section
10	Misc I	R/A	Msgs/Files	Opened as requested
11	Misc II	R/A	Msgs/Files	Opened as requested
12	Misc III	R/A	Msgs/Files	Opened as requested
13	Adults Only	R/A	Msgs/Files	Adult Discussions

Another type of mail section on bulletin boards is known as the public mail section. This section contains mail that can be read by anyone who has access to that section. Most bulletin board systems will contain at least two mail sections if not more.

Access to these sections is determined by the Sysop, for example, if you own a CoCo and ring a bulletin board that is primarily an IBM users board, the Sysop may consider that the IBM mail sections would be of little benefit to you and not give you access to them.

The following is a list of sections that my bulletin board has and what the sections are used for.

Other sections are not in use for any particular reason at this time. R/A means Restricted Access, meaning that the Sysop must approve your access before you can use them.

At the time of this writing, sections 10-12 were being used for games of diplomacy. Diplomacy is a strategic board game normally played at a set location with a group of people.

These sections allow it to be played without everyone having to meet at the one place - it also allows you to play with people who you have never even met. The OS9 S.I.G is for OS9 users, the only restriction on this section is that you must be either an OS9 user or have an interest in Unix based systems to get access.

This is only an outline of my BBS, not of BBS's in general, other systems run different sections and options depending on the types of computers they cater for and the Sysop's personal preferences.

Bulletin Boards are only worth what people put into them - basically you only get back what you put in.

If the sysop allows people to do what they like things will soon get out of hand and the visitors will be put off by meaningless discussions and senseless messages, this type of system will soon lead to a lack of interest from users and subsequently close the board down.

It is both the user's and the Sysop's responsibility to make sure that a reasonable level of discussion is maintained in the interest of the users and the welfare of the board.

A bulletin board's mail sections can be used in a variety of ways from discussing computers to space travel. Contrary to some people's beliefs, BBS's are not just there to discuss computers, any type of discussions are allowed on most boards as long as they remain interesting and sensible.

The only restrictions on leaving mail on boards is that you put the message in the correct section, for example if you store a joke in the "For Sale" section, then you are defeating the purpose of having sections.

On most boards, users have the option of selecting what sections they wish to read depending on their personal preferences. Storing messages in the wrong sections also forces people to read mail that would not normally be there.

Bulletin boards vary in numerous ways other than previously discussed. My bulletin board, because it is dedicated to the CoCo, only has information relating to the CoCo.

Like most BBS's I rely on user input for this information first. For example, thanks to Bill O'Donnell, the Coco-Connection had a complete rundown on the CoCo III quite some time before it was ever released, and I am sure that there are a lot of people who get other advance information on CoCo products very quickly from my board.

I don't believe anyone can successfully run a multi-system bulletin board, as no one person can know all about all computer systems.

ITEMS OF INTEREST ON THE COCO-CONNECTION

Bulletin Section
- COCO III Information
- Memory map for CoCo I & II
- List of peeks and what they do (CoCo I & II)
- List of pokes and what they do (CoCo I & II)
- Pokes for games (extra men or colours)

Trading Section
- Monitors, drives etc for sale (private)
- St Marys Software. Catalogue & price list of software and hardware for the CoCo.
- The software exchange. stationary suppliers catalogue & price list.

Voting Section
- Voting on a variety of subjects and system questionnaires.

PROBLEMS WITH RUNNING BULLETIN BOARDS

Problems I have encountered with BBS's are very few, most problems are normally due to users not understanding how to use their terminal program, or the hardware and the software that the board uses.

Most of these problems are easily sorted out with a little perserverence and reading of the software documentation.

BBS's usually have help files available regarding the separate functions until you get more proficient and no longer need them.

Generally there are not many problems with running a bulletin board, but as usual there are some people who get pleasure out of attempting to crash systems and leave messages that are not of good taste.

The reason behind this type of behavior is beyond my comprehension. I see no sense in replying to these morons as I think it would make them more aggressive in their reply.

Access to this, as with most other systems, is restricted to stop these people from leaving messages in general mail sections, thereby buffering users from seeing these foul comments.

Another problem with bulletin boards is that some people tend to think that the only thing to discuss on a BBS is computers.

Funnily enough very little is actually discussed on computers unless someone has a problem they would like help on.

Almost all subjects are talked about from time to time and any type of discussion is allowed as long as it is kept clean.

One more problem I encounter from time to time is people who join the system just to download files and not even look at the general mail discussions, never mind about joining in!

This annoys me no end and restrictions are made by placing an upload/download ratio on all users. Another sore point is the content of files uploaded.

Very few files uploaded have actually been written by the people who uploaded them!

This is an understandable point except that by the time most people have purchased a modem they are usually proficient enough to be able to write a program of some description.

I have tried everything I can to tell people that ALL magazine programs are copyrighted to a certain extent. While I have checked as thoroughly as I can on the copyright laws concerning magazine articles I feel that

even if legally right, we must bear in mind that people such as Graham rely on programs written by the users to keep his magazine going. the same applies to the American Rainbow and their programs.

I must decide what a reasonable amount of time is before I put these files up on the system. I would like to see a lot more local product rather than American.

Some users have even uploaded commercial programs to the board not knowing that they are a commercial program. This goes to show what the extent of piracy is in the community.

Just getting off the track a little bit I have never preached to anyone about the morals of piracy nor do I intend to start now, but I feel that it is getting a bit much when people have so much software that is illegal that they don't even know what is what anymore!

One more thing I would like to point out is that being a member of a BBS is a privilege not a right, if you don't obey the rules on the road eventually you will not be allowed to drive.

The same applies to all BBS's, the rules are pretty flexible but the privilege will be removed by any Sysop if they are not obeyed.

A lot of people don't realise that BBS's have a responsibility to Telecom under the Telecomunications Act to keep it clean and responsible. Breaking the act can be very expensive to the Sysop.

One last thing that gets on my goat a bit is that some people think that because I can afford to run a board that I should be running all different baud rates and at least two phone lines.

I would like to make it quite clear that I am not subsidized by anyone except myself and that this system costs me money to keep running every day of the week. I run the board out of loyalty to a computer I feel is capable of a lot more than the critics give it credit for.

The reasons behind starting this board were mainly associated with the increasing number of calls that user group contacts were getting because the local user group was or had closed down.

It became quite clear that only a few groups were still in existence and I thought the board could be of some help to these people that did not want to travel half way across town to get to a meeting.

I have asked several times on the board for names, addresses and phone numbers of the contacts that were still running meetings.

If you run a meeting still and would like it put on a list on the BBS then ring me and I will be happy to start a list of all the CoCo groups Australia wide. I am always open to suggestions on improving the board and any suggestions are welcome.

Anyone selling computer peripherals or software that would like a little extra advertising are also welcome, all I need is an unformatted text file either uploaded to the board or sent to me on a disk in either MS-Dos or CoCo format.

The bulletin board runs 24 hours a day and is free of charge. I am now running a Netcomm 1234A Smartmodem and run the system at 300, 1200, and 2400 baud, full duplex. 1200/75 can be used if you have a Smartmodem. The board's name is THE CO-CO CONNECTION and the phone number is 02-618-3591.

GOLDLINK GRAFFITI

MAKE LOVE – Don't bore
RONALD McDONALD w.

ADDERS – EASTER!

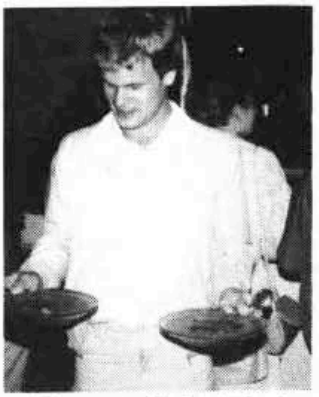
They came from near and far to be in Adelaide at Easter.

Fortunately for Adelaide – they did go home again!

And we finally got dBESET and Jeff in front of a camera! – Oh well, it's only once we hope!

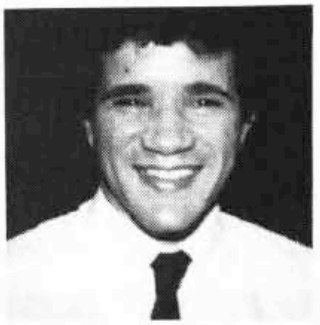
Sundry–sober in Adelaide.

Leisa–almost sober in Adelaide.



Wino – all that food for one person!

Jeff and dBeset



Say "cheese" Mopar

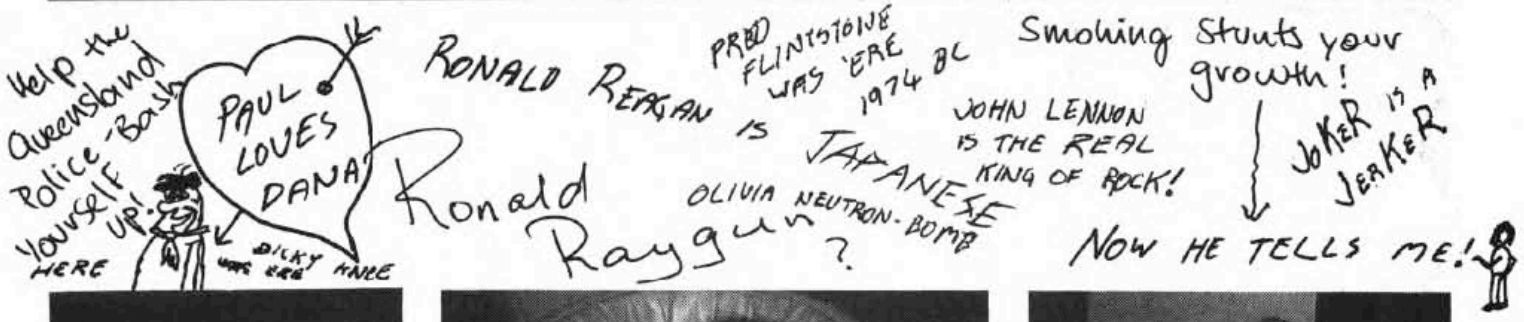
Jeff doing his Dick Smith impression.

Wino on the floor (again!)

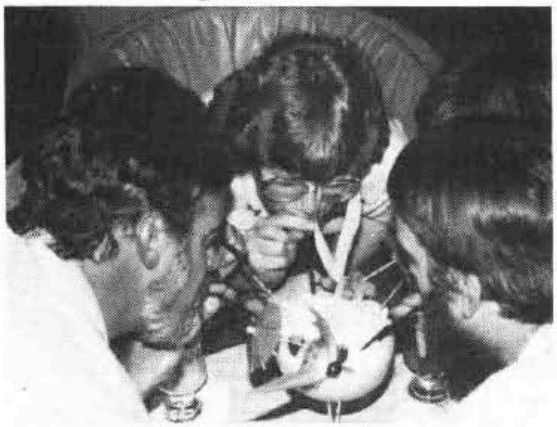
Rubber Duck, Jackal, Jessip and friends

Sundry! leave the poor little Wombat alone

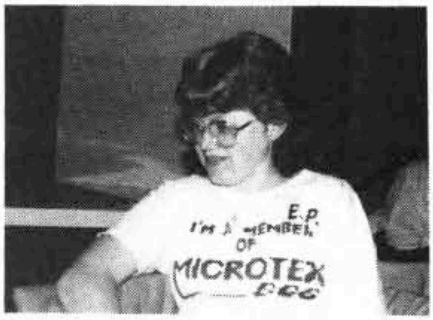
The formidable Jackal with the lovely Dessip.



Sundry being adventurous – and very brave!



They like to share things in Adelaide!

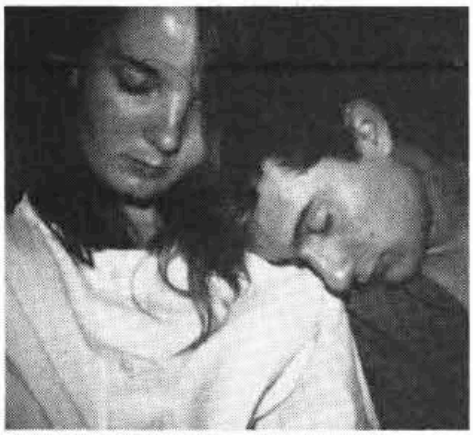


The old "let's see how many people we can get into a sleeping bag" trick!

Say! Aren't they the Blues Brothers....or is it Laurel and Hardy!

The many faces of E.P.

I want the Easter Bunny for Christmas!



Crashed after the Bash!

One of these is Big M – but which one?

more GRAFFITI

I'm 12 and I go to Kindergarten

What's wrong with political jokes – they get elected

Ignore your teeth and they'll go away!

HUMPTY DUMPTY WAS PUSHED!

Goldlink Bashes really are a lot of fun – come along to the next one – will YOU survive?

We've had our first Viatel Wedding! Congratulations go to Greenwood and the Gypsy Rover who were married in Adelaide in February.

Telecom

VIATEL®

AUSTRALIA'S NATIONAL VIDEOTEX SERVICE

APPLICATION FORM

DATE OF APPLICATION / /

(BEFORE COMPLETING THIS APPLICATION, PLEASE READ REVERSE SIDE CAREFULLY)

section 1

PLEASE TICK APPROPRIATE BOX TO INDICATE SERVICE REQUIRED

BUSINESS SERVICE ☐ NON-BUSINESS SERVICE ☐

(CHARGES INCURRED ON BUSINESS SERVICES ARE USUALLY TAX DEDUCTIBLE)

SURNAME (OR BUSINESS NAME IF BUSINESS SERVICE) GIVEN NAMES

POSTAL ADDRESS NUMBER/STREET

SUBURB/CITY STATE POSTCODE

TELEPHONE NUMBER ON WHICH SERVICE IS REQUIRED (INCLUDING STD CODE)

section 2

CONTACT NAME (IF BUSINESS SERVICE) GIVEN NAMES

POSTAL ADDRESS FOR BILLING IF DIFFERENT FROM SECTION 1 ABOVE
NUMBER/STREET

SUBURB/CITY STATE POSTCODE

CONTACT TELEPHONE NUMBER (INCLUDING STD CODE)

section 3

PLEASE DESCRIBE NATURE OF BUSINESS (OR OCCUPATION IF NOT A BUSINESS SERVICE)

PLEASE INDICATE TYPE OF EQUIPMENT USED TO ACCESS VIATEL

special instructions

THIS FORM SHOULD BE HANDED IN AT ANY TELECOM BUSINESS OFFICE OR MAY BE MAILED WITHOUT A STAMP TO FREEPOST 20, VIATEL BOX 188C, GPO MELBOURNE, VICTORIA 3001

PLEASE ALLOW TEN WORKING DAYS FOR PROCESSING OF APPLICATION AND RETURN MAIL ADVICE.

telecom use only

OTE PP VN

BG SC CI

REF

GOLDLINK: The place to be on VIATEL

SPAN OVERLAY NO. 140

REGISTRATION AND SUBSCRIPTIONS

Customers must register as a Business Service if the telephone number nominated for the use of the VIATEL Service is a Business Service and/or VIATEL is to be used wholly or mainly for Business, Commercial, Industrial, Professional or Government purposes. (Charges incurred on Business Services are usually tax deductible.)

Where a Business Telephone Service is nominated for the use of VIATEL, but the use of VIATEL is wholly or mainly for Non-Business purposes, the Customer may be registered as a Non-Business VIATEL subscriber, providing the registration is taken out in the Customer's personal name and address and not a Business name.

Telecom Australia will register the Business or Individual named under Section 1 as a Customer of its VIATEL Service and will provide the Customer with a confidential Customer Identity Number and Personal Password by mail.

Where billing address is indicated, bills and bill related correspondence ONLY will be forwarded to that address. All other correspondence will be forwarded to address under Section 1.

Customers should advise VIATEL of any change of address as soon as possible.

If you lose your Customer Identity Number and/or Personal Password, you must advise VIATEL in writing before new numbers are issued. Our postal address is: Freepost 20, Box 188C, GPO Melbourne, Vic. 3001. FOR SECURITY REASONS REPLACEMENT NUMBERS AND PASSWORDS CANNOT BE PROVIDED OVER THE TELEPHONE.

Customers of VIATEL acknowledge that their name and registered VIATEL Number will appear on the VIATEL Mailbox Directory and that Service Providers and/or other registered VIATEL users may send messages to their VIATEL number.

Telecom Australia undertakes no responsibility in relation to the accuracy of the information or service provided by Service Providers on VIATEL. Telecom Australia will not be responsible for any loss or damage arising out of or in any way connected with the use of this information or service.

Attention is also drawn to the terms and conditions governing the provision of information and services by some Service Providers. These terms and conditions may, in some cases, include a disclaimer absolving the Service Provider from liability regarding information and services supplied on VIATEL. The means of accessing these terms and conditions is set out on the Service Provider's Index Page on VIATEL.

Should you require any changes to your existing telephone equipment (e.g. new exchange line, additional socket), please contact your local District Telecom Office.

In a small number of cases VIATEL reception may be unsatisfactory. Correction may incur an additional charge.

COM • STATION 642

SWAN LINE

by Samantha McCormick

Well, as you've probably realised, there have been a few changes at Goldlink in the past few weeks. The biggest one (for me) has been taking the big step and opening my very own node on 25303.

Ah Graham, you tried to warn me! Boy has it been hard work! Still, despite hours of slaving over a hot terminal, no longer recognizing my bed when, (and if) I see it and running up one page 92 that should keep Viatel in cheeze and bikkies for the next 20 years, it's done!

Swan Sanctuary - is up and running comprising of:

- Poet's Corner, for the more creative Viatellian souls
- The Good News, Where you can read about and share the GOOD things that are happening around us, as well as send bouquets to deserving people.
- Quizz Index, Full of (surprise surprise) quizzes, questionnaires, puzzles and games.
- Forget Me Not, Your own personal Diary service.
- Swans Asylum, for problems that are driving you crazy!

The Care Board is still very much in operation on 642. Meredith has taken then reins there, so now you can have two advisors!

- Swan Online, 10:30pm to 12:30pm Monday to Saturday (stop laughing White Rabbit! I try to finish at 12:30, honest!)

And heaps more in the pipeline including Adults Reserve, which is a whole story in itself, and definetly a story for the over 18's!

I've basically tried - and I think I've succeeded in creating a special haven for Viatellians to 'come out of the cold' to rest and relax and be pampered while still being able to enjoy some good old fashioned fun!

Anyway come and check it out for yourself. I'd love to see you, and would very much appreciate your opinion or any suggestions you might have.

Many thanks to ...

- Graham for being so understanding.
- Philip, for providing support and care as well as pages.
- My members without whom the whole thing would be a complete waste of time.
- And to John, who keeps me sane (most of the time).

Grief! This is starting out to sound like an acceptance speech at the Academy Awards!

Onto more interesting stuff!

Viatel Bashes!

As I was unable to attend any of the recent bashes I sent out a frantic plea for information to any Viatellians that were there. (So blame them, not me for the following gossip!)

- Jackal and Dessip bravely hosted THE Easter bash in Adelaide which was a roaring success, judging from the MB's I received (mostly unprintable!).

Jackal hired a bus to chafeurr the mob, first to the casino for an hour, then off on a boat trip, then a pub crawl - which is a story in itself.

Picture, if you will, 25 'typical Viatellians' (none of whom could sing a note) linking arms and bursting into a hapless pub singing "The Brady Bunch", before making themselves comfortable on the floor! - Yes, they were not so politely asked to leave ...

Apparently it had been sparked off by the joyful rendition of Old McDonald on the bus. You wouldn't believe what he had on that farm!

Eventually they ended up at the Glenelg Footy Club for a light disco and drinks before crawling back to Jackal's for an Easter Egg hunt.

E.P. had busily hidden eggs all over the house (which must've endeared her to Dessip who was no doubt tearing her hair out watching dozens trying to find them!)

Hippo (now Babs) consoled those who missed out - and delighted everyone else - by donning a bunny outfit that has to be seen to be believed (RJC has photo's to sell!) and passing out the remainder of the eggs to the less fortunate egg hunters.

The nights were interesting to say the least, with a dozen Viatellians sleeping on the lounge room floor.

Q. How many Viatellians can you fit in one double sized sleeping bag?

A. 8 (is that when RJC got Wombat pregnant, I wonder?)

The main daytime attraction was Jackal's swimming pool. Which brings me to ask what WAS Batrag doing to Solitaire that induced RJC to wrap his gladwrap bag around his camera and attempt underwater photography??

I could continue to tell you all about Nodonn Battlemaster's 'entertaining' cocktail surprises, Wozzie's terrorizing people on the bumber cars, the failed auctonning of Beetz jumpers, Leisa doing herself a mischeif trying to cockroach (?!?) and so on, but I'm running out of room so that's all I'll say.

Jackal, if you ever recover from this bash and decide one day to have another one I'll be there!

Mind you Brisbane isn't doing badly in the 'bash' stakes either.

How does 3 in 3 weeks sound?

Exhausting!

I'll tell you about them next month!

Right now Graham is screaming for this article so I'd better finish it! Thanks go especially to RJC for answering my plea for information (Fascinating! But I didn't thinK Graham wanted an X-rated magazine just yet, so I only copied the innocent bits!)

Catch you later on the BBS!

Swan.

GETTING TO KNOW THE TANDY 1000

by Jim Rogers

I am still playing around with my T1000 and trying to improve my operation. There is no trouble with the operation of the machine; the main problem is the operator.

I was in Sydney for a couple of weeks in April and I found a relative with a computer which was booted with the MS DOS. I thought I had made a great discovery and could hardly wait to get home with a bundle of disks of public domain copies.

Unfortunately, when I tried to RUN the disks, to my great disappointment, nothing happened except the " Bad Command" replies. I found the reason why when I tried a different approach by trying to copy a disk. The answer was on the screen, The formatting of the disks was incompatible.

Thus for the present I am shelving the MS DOS except for using the Word Processor, Typist, as required and will concentrate on the BASIC section of the MS DOS.

I do not presume that all you T1000 users are as far down the line as I am myself but there may be some users who are beginners also and my own problems, solved as I go along, may be of some assistance to them.

So on to BASIC. Some of the small things I have discovered as I have moved slowly along are not particularly well pointed out in the Reference Manual.

I have found that it is possible to type in after each line number an unlimited amount of data which will appear in the listing but when it is RUN the characters for that line number are limited to 255.

When typing in one portion of a text at one line number and then continuing the text on the next line number dont forget the space before the quote marks otherwise, when RUN, there will be no space between the last and the first words.

If you have been used to using the query (?) for the print command on an earlier machine, it won't work here. However there is a great method on this machine of shortcutting a lot of command words with the ALT key. For instance the ALT P will give you the PRINT in one stroke. Thus it is well worthwhile to learn the ALT combinations as a time saver.

Much time can also be saved by learning, as soon as possible, the functions of the Special Keys. Pages 36,37 of the manual give the list of these.

Now let us try one of the small programs originmally printed for the MC10, just to see what will happen.

Try this one:

```
10 REM***CALCULATOR***
20 REM***ADDING  NUMBERS***
40 CLS
50 INPUT "THE FIRST NUMBER IS";
A
60  INPUT "THE SECOND NUMBER IS
" ;B
70 INPUT "THE  THIRD  NUMBER IS
" ;C
80 X=A+B+C
90 PRINT "THE  TOTAL IS";X
```

Key this in and RUN and you will see that it works. Any number of variations can be made from this to make the calculator multiply, divide etc.

The main point of this exercise is to point out that BASIC programs from the MC10 and the CoCo can be adapted to the T1000.

Of course this is a very simple sample and the more complex programs will require some conversion so I would like to hear from some of you who have gone as far as converting CoCo programs for use on the T1000 and let us print them for all to enjoy.

MICO NEWS

Editor Jim Rogers

The months of April and March were very disappointing times in which I received a total of one letter in each month from MC10 users.

Now this does nothing to help me in my arguments with the bureaucracy for more space in the magazine for more MICO content.

At the monthly policy meetings I have to show good reasons and proof of user members and their interest to fight for concessions and, whilst Graham is inclined to favour my efforts, I have others to convince.

If interest has really fallen off to this extent, and I cannot believe that it has, it could well mean the death of the MICO section of this magazine as our space would be quickly gobbled up by the encroaching sections. (Just look at the growth of interest in the magazine from the Viatel users!)

This I would hate to see, with all the developments which have been made with the MC10 over the past years and all the new new additions which could be forthcoming in the future all gone for nought.

So, if you are genuine about retaining the MICO content, which I feel sure you are, then give me your support; let me have some articles, objections, programs, anything, so that I will have some ammunition to fire at the putter-downers. I can't believe that all the MC10 users have sold their machines, broken them up or converted them to toasters in the last couple of months. At least not all of you. However if this is so, then I am the only one still operating an MC10 and I hope to be doing this for a long while yet!

Jim

simeqn

16K ECB

EDUCATION

by Mal McLaughlan

SIMEQN CHECKS the solution of Simultaneous Equasions. This could be of benefit to all High School students, especially in their revision and homework assignments.

After solving the problem by normal methods, it is only necessary to type in six values from the two equations, and the answer is immediately shown on the screen.

The Listing:

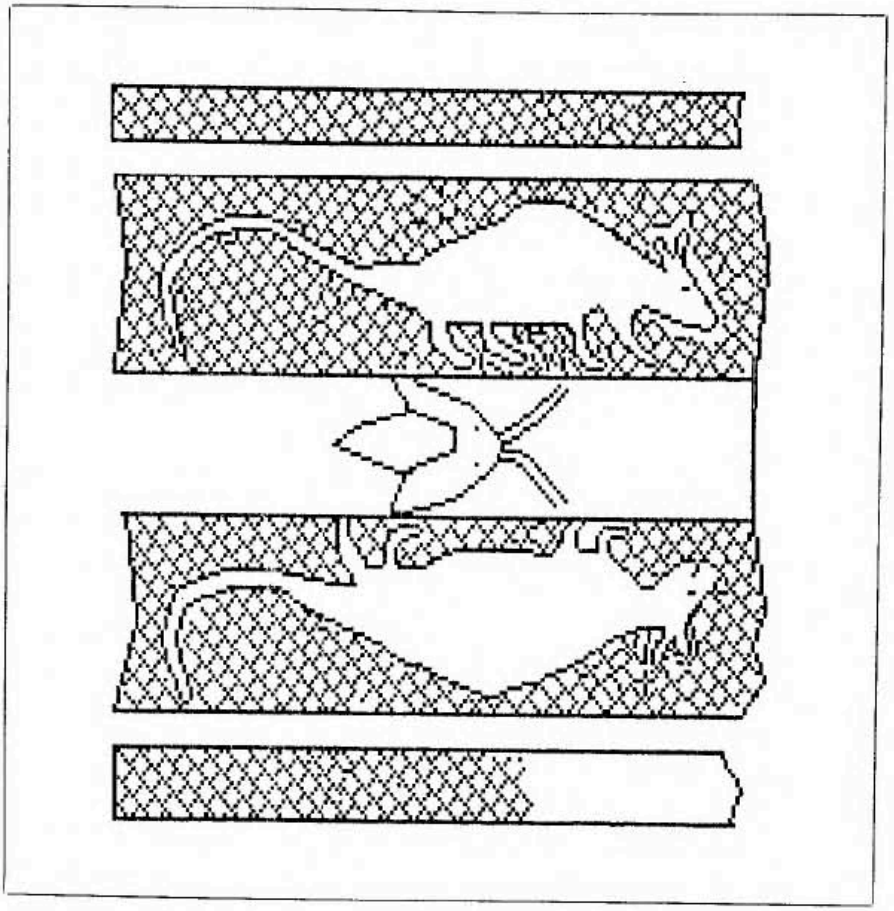
```
 1 '*******SIMEQN*****************
**SIMULTANEOUS EQUATION CHECKER*
*******BY MAL MCLAUCHLAN*********
**********MARCH,1987************
*
2 GOTO 10
3 SAVE"204A:3":END'2
4 '**A PROGRAM DESIGNED FOR HIGH
SCHOOL STUDENTS TO CHECK THEIR
ANSWERS TO REVISION TESTS IN
SIMULTANEOUS EQUATIONS**********
10 CLS2:PRINT@33,"simultaneous e
quation checker.";:PRINT@65,"---
--------------------------";:PR
INT@97,"A TYPICAL PROBLEM WOULD
BE TO ";:PRINT@129,"FIND OUT THE
 VALUE OF X AND Y ";:PRINT@161,"
IN THE FOLLOWING EQUATIONS:- ";
20 PRINT@193,"          5X+3Y=70
            ";:PRINT@225,"
   2X+13Y=146            ";
30 PRINT@458,"<any key>";:EXEC 4
4539
40 CLS2:PRINT@65,"          5X+
3Y=70           ";:PRINT@97,"
       2X+13Y=146          ";:PR
INT@161,"ONCE YOU HAVE WORKED OU
T THE  ";:PRINT@193,"SOLUTION BY
 ONE OF THE METHODS";:PRINT@225,
"YOU HAVE LEARNED,JUST TYPE IN "
;
50 PRINT@257,"WHEN PROMPTED:-
   5,3      ";:PRINT@289,"   2,1
3            70,146     ";:PRINT
@321,"AND <ENTER> EACH PAIR.
    ";:PRINT@353,"YOU WILL BE RE
WARDED WITH X=8,";:PRINT@385,"Y=
10.        AN EASY CHECK!!  ";
60 PRINT@458,"<any key>";:EXEC 4
4539
70 CLS:PRINT" NOW TYPE THE COEFF
ICIENTS OF X  AND Y IN YOUR FIRS
T EQUATION,   WITH A COMMA BETWE
EN THEM, AND  <ENTER>"
80 INPUT A,B
90 PRINT:PRINT" NOW TYPE THE COE
FFICIENTS OF X AND Y IN THE SECO
ND EQUATION."
100 INPUT C,D
110 M=A*D-C*B
120 PRINT"TYPE 2 VALUES FOR R.H.
S."
130 INPUT P,Q
140 X=(P*D-Q*B)/M
150 Y=(A*Q-C*P)/M
160 PRINT"X=";X;" Y="Y
170 PRINT:PRINT@450,"<press any
key for more>"
180 EXEC 44539
190 GOTO 70
```

ABORIGINAL ART

GRAPHICS

16K ECB

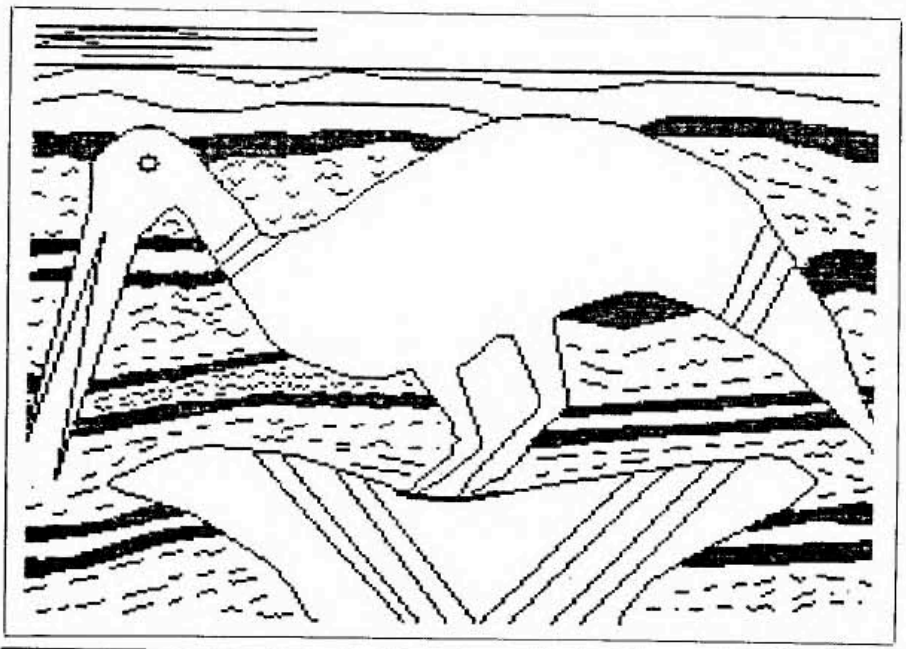
by Mal McLaughlan



AREAS OF ART that I haven't yet seen tackled on CoCo graphics are the rock and bark sketches done by the Aboriginals in earlier times.

These are seen mainly today in museums and art galleries and also in some cave systems.

I found such intricate drawings too difficult (and lengthy) to do in a BASIC program, so I used the utility "CoCoDraw" (Australian Rainbow, November 1986), which resulted in two machine language files, ABORART1 and ABORART2.



These are contained in this month's Softgold on Tape and can easily be viewed by first typing in the following short loading/viewing program:-

```
10 CLS:INPUT"WHAT IS THE ML FILENAME";F$
20 PMODE4,1:PCLS:SCREEN1,1
30 LOADM F$ 'CHANGE LOADM TO CLOADM FOR TAPE SYSTEM
40 GOTO 40
```

Set up the tape or disk, and RUN the above program.

Alternatively you can load the ML files into utilities like GRAFLOOK or COCODRAW, and look at them that way.

CoCo 3 Program

THE FIRST FLEET

DATABASE

by Keith McIntosh

WELL, AS THEY say, there has to be a first time, and this is mine. What has prompted me to put pen to paper was your announcement of a CoCo 3 program competition.

I have seen a lot of educational-type programs in the American Rainbow, ranging from presidents down to simple maths, and it seems to me they encourage a national pride and awareness not noted in our country.

Australia is having its Bicentennial in 1988, and I reckon that through your Aussie magazine you should encourage budding Aussie Programmers to contribute Dinkum Aussie Educational Programs.

How about Early Explorers of Australia? How about prime ministers? How about produce and minerals programs, etc.

With the great graphics now available I can picture menu driven programs tracing the exploration routes of the early explorers (what a boon for the kids!). Pictures and data relating to our Prime Ministers etc, etc..

This could be our contribution to Our Bicentennial ... so what about it Softgold reader?

This is a program that I first wrote a little while back for use with my old grey case 64K. I utilized some of the functions from "Screen Machine" such as the scroll protect for display and thought it was great by my own standard. I have re-written it for use with the Colour Computer 3 and RGB monitor (I'm rapt in both!).

About the Program

I have called it "Fleet" and it is a BASIC program about the First Fleet to arrive in Australia. It draws data from several data files that contain info about those people who came with the Fleet.

If you have a Version 2.1 CoCo 3, you can enter the command "DOS", otherwise type in 'RUN"FLEET"'. The print function was set for a DMP 110 - however, it seems to print OK on my later DMP130.

I am not a master programmer by any means, so the programming may be a little (or a lot) off and it is not intended to be entered in any contest as I can't stand failure.

Use it, have a bit of fun and you will probably understand what I was driving at earlier.

(Ed's Note - Due to the nature of the program and the number of data files that the program uses, it will not be found on this month's CoCoOz Tape. It will come on a seperate disk.)

○

LOTTO NUMBER PICKER

MC-10

by David Hill

This program is a utility. It asks you how many boxes you wish to have. It then picks 6 numbers out of 40 and does your choice of the number of boxes. (This program is the original and I would suggest that lines 30, 35, 45, 60, 80 & 105 be changed to (45) for Lotto or (38) for Pools from the present RND(40). Otherwise it is probably one of the neatest number selectors yet. J.)

The Listing LOTTO:

```
1 REM $$$$$$$$$$$$$$$$$$$$
2 REM $$  DAVID HILL'S  $$
3 REM $$  LOTTO NUMBER  $$
4 REM $$      PICKER    $$
5 REM $$ NOVEMBER//1986 $$
6 REM $$$$$$$$$$$$$$$$$$$$
20 CLS:INPUT "HOW MANY BOXES";X
25 FORB=1TOX
30 N=RND(40)
35 O=RND(40)
40 IFO=NTHEN35
45 P=RND(40)
50 IFP=NTHEN45
55 IFP=OTHEN45
60 Q=RND(40)
65 IFQ=NTHEN60
70 IFQ=OTHEN60
75 IFQ=PTHEN60
80 R=RND(40)
85 IFR=NTHEN80
90 IFR=OTHEN80
95 IFR=PTHEN80
100 IFR=QTHEN80
105 S=RND(40)
110 IFS=NTHEN105
115 IFS=OTHEN105
120 IFS=PTHEN105
125 IFS=QTHEN105
130 IFS=RTHEN105
200 PRINTN,O,P,Q,R,S
300 PRINT"   Press any key to co
ntinue   "
302 A$ = INKEY$:IF A$ = "" THEN
302
400 NEXTB
```

CRUMBLING MENTAL BLOCK

by Johanna Vagg

AFTER WE BOUGHT our CoCo and before I found the Rainbow, I tried converting some programs written for another Tandy model. I only had limited success and was told by a well meaning programmer that I was going about things the wrong way. He said that I should learn more about the computer instead of just playing around.

Well, I'd been out of school for fourteen years and I didn't really feel like studying! He tried to teach me a BIT about BINARY numbers. He talked about the early computers with their switches which were manually placed in an ON or OFF position. That day was born a mental block, and I continued in my own way.

I wonder how many new CoCo owners share my mental block? Recently I had to use binary numbers while I was working on something I WANTed to do. The block began to crumble. If I try to explain the BINARY BIT, you may not understand until you're ready either, but at least then you'll be able to come back to this. It might even help.

First look at these numbers:

64, 32, 16, 8, 4, 2, 1, 0

Would you think that by adding two or more of these, you could make 127 different numbers, ie all the numbers from 1 to 127?

I doubted it, so I checked it out. Try a few, or a lot, or just enough to convince yourself.

In our 'normal' decimal system, we put a 1 in the next column to the left every time we get to ten, in binary, we do this every time we get to two - the lazy person's counting system? A '1' in the second column means 1 lot of 2; in the third column, 2 lots of 2 and so on. It might sound like the lazy person's way, but it always confuses me when I think of binary in those terms. So I put the numbers ...

64 32 16 8 4 2 1

... at the top and use that for reference. Zero is zero in anybody's language (or is it?) so leave that off the end of the list. Our other seven numbers now become 'switches' which when ON represent those numbers. To write the number 1, we turn the 1 ON and leave the others OFF ie:

0 0 0 0 0 0 1

Starting at the other end we get the number 64:

1 0 0 0 0 0 0

All ON adds up to 127. Let's try a few:

0 0 0 0 0 1 0 = 2
0 0 0 0 1 0 0 = 4
0 0 0 0 1 1 1 = 4 + 2 + 1 = 7
1 0 0 0 0 0 1 = 64 + 1 = 65
0 1 1 1 0 0 0 = 32 + 16+8 = 56

Yes, I know we have an eight bit computer ... put the next number, ie 128, in the next column to the left and you'll be able to make all the numbers up to 255. Does that number ring a bell?

The computer uses binary numbers all the time, but I haven't found it necessary to use them often. Recently, however, we bought an early christmas present - a printer - and I discovered that a knowledge of binary numbers would be an advantage in writing a program to print graphics patterns or pictures. You see, the DMP 110 uses 7 vertical dots in a dot-column and you can print all those dots, none of the dots, or 126 other different combinations of dots and spaces, or ONs and OFFs.

Armed with this information I had another look at Garfield in the first issue of CoCo (Sept 84). Garfield was to be printed

continued on page 58

CoCo 3 Program

GUESS

EDUCATION

by Harry Hoffman

GUESS IS A game designed to aid in your childs improvement in the addition of numbers. The program is farily self-explanitory, so have fun with it!

The Listing:

```
0 GOTO10
1 '****** GUESS *****************
   **** HARRY HOFFMAN **********
3 SAVE"216:3":END'10
10 '
*********************************
** TYPE GOTO 1490 TO LIST EACH *
** LINE AS A SINGLE LINE       *
*********************************

20 CMP

30 PALETTE12,0:PALETTE13,64

40 PALETTE5,33

50 '

*********************************
** SET UP STRINGS FOR USE,AND **
** MOST IMPORTANTLY FOR       **
** INVERTING                  **
*********************************

60 C$="LEVEL":D$="YOUR SCORE IS
:":E$="WRONG":F$="RIGHT"

70 G$="TYPE >N< FOR NEXT PLAYER"

80 H$="THE RIGHT ANSWER IS":I$="
PLEASE,TRY LOWER LEVEL":J$="try"
+CHR$(128)+"higher"+CHR$(128)+"l
evel"
90 '

*********************************
**      SETTING UP BORDER      **
*********************************

100 GOSUB110:GOTO210

110 WIDTH40:CLS8:ATTR2,4

120 FOR BORDER=0TO39STEP2

130 POKE140,150:EXEC43345

140 LOCATE BORDER+1,0:LOCATE BOR
DER,1:LOCATE BORDER,23:LOCATE BO
RDER+1,22:PRINT"";:NEXT BORDER

150 FOR BORDER=3TO21STEP2

160 POKE140,200:EXEC43345

170 LOCATE 0,BORDER:LOCATE1,BORD
ER-1:LOCATE39,BORDER-1:LOCATE38,
BORDER:PRINT"";:NEXT BORDER
180 '

*********************************
**  WRONG AND RIGHT COUNTERS   **
**  SET TO ZERO, AND CONVERT   **
** TO STRINGS FOR FURTHER USE  **
*********************************

190 WS=0:RS=0:WS$=STR$(WS):RS$=S
TR$(RS):RETURN
200 '

*********************************
**       INTRODUCTION          **
*********************************

210 LOCATE18,5:PRINT" THE";

220 LOCATE17,8:PRINT" GREAT";

230 LOCATE13,11:PRINT" GUESSING
GAME";

240 LOCATE18,14:PRINT" BY";

250 LOCATE13,17:PRINT" HARRY HOF
FMANN";

260 ATTR2,4,B:LOCATE16,20:PRINT"
 ANY KEY";
270 IF INKEY$=""THEN PLAY"O3T20A
CD" :GOTO 270
280 REMOVING

*********************************
**   WIPE OUT INTRODUCTION     **
**   WITHOUT >CLS< COMMAND     **
*********************************

290 ATTR7,7:FOR OUT=5TO20STEP3:F
OR WIPE=13TO28:LOCATE WIPE,OUT:P
RINT"";:POKE140,10:EXEC43345:NEX
T WIPE,OUT
300 '

*********************************
**  COCO ASKS FOR YOUR NAME    **
*********************************

310 LOCATE5,5:PRINT"";:ATTR3,5:L
OCATE5,5:PRINT" PLEASE TELL ME";
:LOCATE5,9:PRINT" YOUR NAME";:LO
CATE5,13

320 NA$=INKEY$:IF NA$=""THEN PLA
Y"T150O2B":GOTO320:ELSE IF NA$=C
HR$(13) THEN GOTO 360
330 PRINTNA$;:LINEINPUT NB$:NM$=
NA$+NB$
340 IF NA$="" AND NB$="" THEN NM
$=" - WHAT'S YOUR NAME ?"
350 GOTO370
360 NM$=" - WHAT'S YOUR NAME ?"
370 '

*********************************
**    CENTERING GREETINGS      **
*********************************

380 A$=" HALLO ! "+NM$:P=(INT(19
)-LEN(A$)/2)
390 '

*********************************
**  PRINT GREETINGS AND REPLY  **
*********************************

400 CLS(RND(4)):ATTR2,4:GOSUB120

410 LOCATEP,12:PRINT A$;:GOSUB11
00:LOCATE4,6:PRINT" MY NAME IS C
OCO 3";:LOCATE4,12:PRINT" I AM V
ERY PLEASED TO MEET YOU";:LOCATE
4,18:PRINT" AND,OF COURSE,TO PLA
Y WITH YOU";:GOSUB1100:GOSUB1120
420 '

*********************************
**  PRINT DIFFERENT LEVELS OF  **
**  DIFFICULTY, AND INPUT FOR  **
**  CHOICE OF LEVEL            **
*********************************

430 CLS(RND(4)):ATTR2,4:GOSUB120
```

```
440 LOCATE4,4:PRINT"";:ATTR3,5:L
OCATE 4,4:PRINT" PLEASE CHOSE YO
UR LEVEL OF ";:LOCATE4,6:PRINT"
DIFFICULTY ";NM$;

450 LOCATE4,8:PRINT" 1 = NUMBERS
 UP TO 10 ";

460 LOCATE4,10:PRINT" 2 =    "+C
HR$(34)+"    UP TO 25 ";

470 LOCATE4,12:PRINT" 3 =    "+C
HR$(34)+"    UP TO 50 ";

480 LOCATE4,14:PRINT" 4 =    "+C
HR$(34)+"    UP TO 100";

490 LOCATE4,16:PRINT" 5 =    "+C
HR$(34)+"    UP TO 150";

500 LOCATE4,18:PRINT" 6 =    "+C
HR$(34)+"    UP TO 200";

510 LOCATE4,20:LEVEL$=INKEY$:IF
LEVEL$=""THEN PLAY"T10003FGB":GO
TO510:ELSE LEVEL=VAL(LEVEL$)
520 '

*********************************
**  GO BACK FOR NEW INPUT IF   **
**  LEVEL IS OUT OF RANGE      **
*********************************

530 IF LEVEL<1 OR LEVEL>6 THEN G
OSUB1460:GOTO 430
540 REM


*********************************
********  SET UP LEVEL  ********
*********************************

550 ON LEVEL GOTO 560,570,580,59
0,600,610

560 A=RND(10):B=RND(10):GOSUB620
:GOTO560

570 A=RND(25):B=RND(25):GOSUB620
:GOTO570

580 A=RND(50):B=RND(50):GOSUB620
:GOTO580

590 A=RND(100):B=RND(100):GOSUB6
20:GOTO590

600 A=RND(150):B=RND(150):GOSUB6
20:GOTO600

610 A=RND(200):B=RND(200):GOSUB6
20:GOTO610

620 REMINDER

*********************************
** PRINT LEVEL,NAME,AND SCORE **
*********************************

630 WIDTH 32:CLS(LEVEL):PRINT@6,
C$;LEVEL;:PRINT@38,NM$;

640 PRINT@70,D$;

650 PRINT@102,E$;WS$;:PRINT@110,
F$;RS$;

660 REMEMBER

 *********************************
 * COCO'S CHOICE IF >+< OR >-< *
 *********************************

670 CALCULATOR=RND(10):IF CALCUL
ATOR<=4THEN CA=1 ELSE IF CALCULA
TOR>4 THEN CA=2
680 '

 *********************************
 *  NEXT LINE IS TO PREVENT A    *
 *  NEGATIVE ANSWER. IF SO,GO    *
 *  BACK TO * SET UP LEVEL *     *
 *********************************

690 IF CA=2 AND A<B THEN RETURN

700 ON CA GOSUB 720,880:RETURN
710 '

*********************************
** QUESTION FOR + CALCULATION **
** START HERE                 **
*********************************

720 PRINT@166,G$;
730 '

*********************************
**  CHECK FOR RIGHT ANSWERS    **
** AND REMIND OF HIGHER LEVEL **
*********************************

740 IF RS> WS+5 THEN PRINT@358,J
$;
750 PRINT@230,A;"+";B;"=";
760 '

*********************************
* TRANSFERE TO SUB. IF WRONG    *
* ANSWERS ARE MORE THAN RIGHT   *
* ONCE, TO INVERT WRITING       *
*********************************

770 IFWS>RS THEN GOSUB 1330
780 '

*********************************
**    INPUT ANSWER AND CHECK   **
**    IF WRONG OR RIGHT        **
*********************************

785 GG$=INKEY$
790 AA$=INKEY$:IF AA$=""THEN PLA
Y"O3T200A":GOTO790:ELSE PRINTAA$
;:IF A+B<10 THEN GOTO830:ELSE TI
MER=0
800 AB$=INKEY$:IF TIMER<100 AND
AB$=""THEN GOTO 800 ELSE PRINTAB
$;:IF A+B<100 THEN GOTO 820:ELSE
 TIMER=0
810 AC$=INKEY$:IF TIMER<100 AND
AC$=""THEN GOTO 810 ELSEPRINTAC$
;:GOTO840
820 ANSWER$=AA$+AB$:GOTO850
830 ANSWER$=AA$:GOTO850
840 ANSWER$=AA$+AB$+AC$
850 ANSWER=VAL(ANSWER$):GOSUB119
0:IF ANSWER=A+B THEN GOSUB1030:R
ETURN ELSE GOSUB1140:PRINT@262,H
$;:GOSUB1290:GOSUB1120
860 RETURN
870 '

*********************************
** QUESTION FOR - CALCULATION **
** START HERE                 **
*********************************

880 PRINT@166,G$;
890 '

*********************************
**  CHECK FOR RIGHT ANSWERS    **
** AND REMIND OF HIGHER LEVEL **
*********************************

900 IF RS> WS+5 THEN PRINT@358,J
$;
910 PRINT@230,A;"-";B;"=";
920 '

 *********************************
 * TRANSFERE TO SUB. IF WRONG    *
 * ANSWERS ARE MORE THEN RIGHT   *
 * ANSWERS, TO INVERT WRITING    *
 *********************************

930 IF WS>RS THEN GOSUB 1330
940 '


*********************************
**    INPUT ANSWER AND CHECK   **
**    IF WRONG OR RIGHT        **
*********************************

945 GG$=INKEY$
950 AA$=INKEY$:IF AA$=""THEN PLA
Y"O3T22A":GOTO950:ELSE PRINTAA$;
:IF A-B<10 THEN GOTO 990:ELSE TI
MER=0
960 AB$=INKEY$:IF TIMER<100 AND
AB$=""THEN GOTO 960 ELSE PRINTAB
$;:IF A-B<100 THEN GOTO 980:ELSE
 TIMER=0
970 AC$=INKEY$:IF TIMER<100 AND
AC$=""THEN GOTO 970 ELSE PRINTAC
$;:GOTO1000
980 ANSWER$=AA$+AB$:GOTO 1010
990 ANSWER$=AA$:GOTO 1010
1000 ANSWER$=AA$+AB$+AC$
1010 ANSWER=VAL(ANSWER$):GOSUE11
90:IF ANSWER=A-B THEN GOSUB1030:
RETURN ELSE GOSUB 1140:PRINT@262
,H$;:GOSUB1310:GOSUB1120
1020 RETURN
1030 REMEMBER

*********************************
** S/R FOR PRINTING GOOD AND  **
** SOUND                      **
*********************************

1040 POKE65497,0

1050 PRINT@454,"WELL DONE  ";:PR
INT@486,NM$;"!";

1060 L=143+(LEVEL*16)
```

```
1070 FORX=1024TO1024+480STEP32:P
OKEX,L:POKEX+1,86:POKEX+2,69:POK
EX+3,82:POKEX+4,89:POKEX+5,L:POK
EX+30,68:POKEX+29,79:POKEX+28,79
:POKEX+27,71:POKEX+26,L:POKEX+31
,L:PLAY"O4T255C":NEXTX

1080 POKE65496,0

1090 FOR RIGHT=1TO12:PLAY"O3T30B
GDG":NEXTRIGHT:RS=RS+1:RS$=STR$(
RS):GOSUB1100:AA$="":AB$="":AC$=
"":RETURN
1100 REM

*********************************
**    S/R FOR SHORT DELAY      **
*********************************

1110 FOR DLY=0TO 1000:NEXT:RETUR
N
1120 '

*********************************
**     S/R FOR LONG DELAY      **
*********************************

1130 FOR DLY=0TO2500:NEXT:RETURN
1140 REMARK

*********************************
**   S/R FOR PRINTING WRONG    **
**   AND SOUND                 **
*********************************

1150 PRINT@422,"sorry";:A$=NM$:G
OSUB1210:PRINT@486,"try";+CHR$(1
28)+"another";+CHR$(128)+"one";

1160 POKE65497,0:FORX=1024TO1504
STEP32:POKEX,23:POKEX+1,18:POKEX
+2,15:POKEX+3,14:POKEX+4,7:POKEX
+27,23:POKEX+28,18:POKEX+29,15:P
OKEX+30,14:POKEX+31,7:PLAY"T2550
2A":NEXTX

1170 FOR REPEAT=1TO5:FOR WRONG=2
55TO1STEP-3:POKE140,WRONG:EXEC43
345:NEXT WRONG,REPEAT:POKE65496,
0:WS=WS+1:WS$=STR$(WS):AA$="":AB
$="":AC$="":RETURN
1180 '

*********************************
* CHECK INPUT FOR NEXT PLAYER   *
*********************************

1190 IF ANSWER$="N" THEN GOSUB11
0:GOTO310 ELSE RETURN
1200 '

*********************************
**   S/R FOR INVERTING NAME    **
*********************************

1210 C=453

1220 FOR X=1 TO LEN(A$):B$=MID$(
A$,X,1)

1230 D=ASC(B$)

1240 IF D>63 THEN D=ASC(B$)-64

1250 POKE1024+X+C,D

1260 NEXT

1270 RETURN
1280 '

*********************************
* S/R FOR INVERTING >+< RESULT *
*********************************

1290 A$=" "+STR$(A+B)+" ":C=299:
GOSUB1220:GOSUB1470:RETURN
1300 '

*********************************
* S/R FOR INVERTING >-< RESULT *
*********************************

1310 A$=" "+STR$(A-B)+" ":C=299:
GOSUB1220:GOSUB1470:RETURN
1320 '

*********************************
** S/R FOR INVERTING WRITING   **
** IF WRONG ANSWERS ARE MORE   **
** THAN RIGHT ANSWERS          **
*********************************

1330 POKE65497,0:C=5:A$=C$+STR$(
LEVEL)+" ":GOSUB1220

1340 C=37:A$=NM$:GOSUB1220

1350 C=69:A$=D$:GOSUB1220

1360 C=101:A$=E$+WS$:GOSUB1220

1370 C=109:A$=F$+RS$:GOSUB1220

1380 IF CA=1THEN GOTO 139C ELSE
IF CA=2 THEN GOTO 1400

1390 C=229:A$=STR$(A)+" +"+STR$(
B)+" =":GOSUB1220:GOTO1410

1400 C=229:A$=STR$(A)+" -"+STR$(
B)+" =":GOSUB1220

1410 C=165:A$=G$:GOSUB1220

1420 C=357:A$=I$:GOSUB1220

1430 POKE65496,0

1440 RETURN
1450 '

*********************************
**   S/R FOR A SHORT SOUND     **
*********************************

1460 FORX=1TO14:PLAY"V30T150O2AB
CDEFG":NEXTX:RETURN
1470 FOR REP=0TO5:PLAY"T250O5BGD
G":NEXT REP:RETURN
1480 '

*********************************
** 3 POKES TO LIST PROGRAM BY **
** SINGLE LINES. PRESS KEY     **
*********************************

1490 POKE383,126:POKE384,161:POK
E385,177:POKE113,0:LIST20-
1500 '
*********************************
**  THIS FROGRAM WAS WRITTEN   **
**  BY HARRY HOFFMANN          **
**  CROWS NEST CARAVAN PARK    **
**  CROWS NEST QLD 4355        **
*********************************
1510 '
      iiiiiiiiiiiiiiiiiiii
      ii     i iii i     ii
      iiii iii iii i iiiiii
      iiii iii     i    iii
      iiii iii iii i iiiiii
      iiii iii iii i     ii
1520 'iiiiiiiiiiiiiiiiiiii
      ii     i iii i     ii
      ii iiiii  ii ii ii ii
      ii    ii i i ii ii ii
      ii iiiii ii  ii ii ii
      ii     i iii i     ii
      iiiiiiiiiiiiiiiiiiii
```

APOLOGY

Over the past few months Val Stephen has sent to us a few programs and the such for inclusion in the magazine.

But due to a typing error his name has been written as "Wal Stephenson" and "Val Stephenson".

Many apologies for this oversight.

COME TO at Bundee

Conf '87 this year is to be held at the Uniting Church's campsite in Bundeena NSW.

This is a particularly pretty area of Sydney, situated on the northern tip of the Royal National Park, in Port Hacking.

The water views are fabulous, and the bushwalks are amoungst the best in Australia.

Not that you'll have anytime during conference for these things, because as usual, the conference will be jam packed with all sorts of things to see and do!

The big news this year will obviously be the growing use of OS-9 Level 2 on the CoCo 3's; and Conf '87 will be the definitive place to see this excellent system.

By that time initial users will have had time to sort the system out and create some really interesting stuff.

But it is not just OS-9 that is of interest this year.

With the release of the new T1000 EX and SX, interest in these machines has never been higher. We'll have a number of these computers at the conference, as well as their big brothers, the T3000 series, which we'll be putting through their paces.

We've had continuing interest in some of the more diverse subjects covered in the magazine at past conferences, so again this year we'll have tutorials on hardware mods and on Forth.

There'll be Basic Basic and Advanced Basic courses, and an Assembly Language tutorial as well.

Other computers will be discussed, principally the 68000 series of computers, and of course, we'll be showing Goldlink 642 on Viatel - and Videotex in general.

Conference is a place to meet old friends, to meet the people behind the names in the magazine, to learn a lot of new information, to see the latest Tandy equipment.

We hope you'll come. We're sure you'll be glad you did. But please hurry your booking, because accommodation (which is not obligatory) and places at the conference, are both limited by the size of the centre.

The cost is increased over previous years due entirely to the fact that we are doing it in Sydney which is a good deal more expensive than the Gold Coast!

On the other hand, many of you will save by not having the additional travelling expenses associated with getting to the Gold Coast.

We aim to make the conference a family affair, and the location is a good one for people with families who are less interested in computers, but who would still like to be with dad or mum for the weekend.

The family can take a ferry trip, go for bush walks, or just laze on the beach, whilst you do your thing at the conference.

CONF '87

na N.S.W.

CONF '87

P.O. BOX 1742, SOUTHPORT. QLD. 4215 Phone (075) 510 015

Rates

Accommodated (1) $87.00
Family of 2, + $68.00 = $155.00
Additional family members $52.00 ea
Includes supper Friday evening, breakfast lunch and dinner on Saturday and breakfast and lunch on Sunday plus all accommodation.

Non Accommodated Rates

	One day	Two Days
One person	$40.00	$58.00
Sat Evening Meal	$12.00	$12.00
	$52.00	$70.00

Additional family $31.50 $45.50 /person
Includes morning / afternoon tea and lunch.

$20.00 deposit required with booking; final payment to be made by 15th July 1987.

LOCATION:-
Uniting Church's campsite
Bundeena NSW

DATE:- 8th & 9th August, 1987

REGISTER NOW!!
We can only accept a limited number of people this year. DON'T MISS OUT! on a top weekend of FUN, FRIENDSHIP and LEARNING.

Name: .....
Address: .....
Phone: .....
No. People attending: .....

SPEAK UP!:- Now is your chance to suggest your ideas for any tutorials we may not have mentioned. (participants only).

Tutorials likely to attend: .....
.....

Please find enclosed:
chq/money order/bankcard/visa/mastercard
Card No. .....
Signature: .....

POKEING PEEKING and PRINTING

16K ECB + PRINTER (DMP-110)

by Johanna Vagg

IF, LIKE US, you have been getting CoCo or Softgold for some time, and have just recently bought a printer, you will probably have been searching through your magazines for printer programs.

I found "Garfield" in the first issue of CoCo (Sept 84) and managed to get a reasonable picture on my Tandy DMP110 after I made some changes to the program. This was only one picture. I wanted something which would do a screen dump of any picture.

December 84 CoCo had a program, SCREEN PRINT, or PMODE0 PRINTER by Gordon Thurston. It was one of those 'strange looking listings', you know, the assembly language and machine code ... there are ways of entering the machine language code from these programs.

The method I have adopted is to use these lines:

```
FOR I=16000 TO 16329:
 REM ADJUST TO SUIT
READ Q$:POKEI,VAL("&H"+Q$):
 NEXTI
```

Then I put all the numbers (hexadecimal) in DATA lines. This way I have a BASIC program which I can edit if I've made any mistakes. In this particular listing it is very difficult to see the difference between 8, 0 and B.

I had the CoCoOz tape so I thought I'd get the use of the program the easy way. It didn't work. I checked the START, END and EXEC addresses.

```
 To find START address:
PRINT PEEK(487)*256+PEEK(488)

 The End address:
PRINT PEEK(126)*256+PEEK(127)-1

 The EXEC address:
PRINT PEEK(157)*256+PEEK(158)
```

The addresses didn't match the ones in the listing. The next step was to use MLDATGEN (machine language data generator) from June 84 CoCo.

If you don't own such a program, you can still examine the machine language programs you have CLOADMed. When you have your START and END addresses, use this little program:

```
 5 REM EXAMINE MEMORY
10 ST=16000:REM ADJUST TO SUIT
20 FOR X=ST TO ST+14
30 PRINTX;PEEK(X),HEX$(X)" ";H
EX$(PEEK(X))
40 NEXT
50 EXEC44539
60 ST=ST+15
70 GOTO20
```

This will give you the address and the number POKEd there, first in DECIMAL and then in HEXADECIMAL. You will see 15 addresses on the screen at once and when you press a key you will see the next 15.

If you have CoCoOz 22 and you're keen enough to examine the SCREEN PRINT program, you should find three lots of 5 numbers which don't belong. So how do we get rid of them?

Well, with MLDATGEN this is relatively simple. When you have the DATA version on tape, CLOAD it, delete the offending numbers and adjust the addresses to which you are POKE-ing. Then

you can re-CSAVE it as a BASIC program or ...

```
CSAVEM"PMODE0",16000,16329,16000
```

If you don't have a machine language data generator, you will need to almost start from scratch. This is the way I would do it:

```
0 GOTO10
1 '********** SCRNDATA **********
   ****** JOHANNA VAGG *********
3 SAVE"182DA:3":END'8
10 REM CLEAR MEMORY IF NECESSARY
20 FOR I= 16000TO 16329
30 READ Q$:POKEI,VAL("&H"+Q$):NE
XTI
40 DATA 8E,6,0,AF,8D,0,B8,86,E,A
7,8D,0,B4,86,8,A7,8D,0,A9,86,80,
A7,8D,0,A4,86,10,A7,8D,0,9C,C6,7
,86,12,17,0,9C,86,1B,17,0,97,86,
E,17,0,92,6F,8D,0,8A,DE,19,33,42
,DF,1B,A6,84,A4,8D,0,7D,27,A,86,
80,AA,8D,0,76,A7,8D,0
50 DATA 72,30,88,10,1C,FE,66,8D,
0,69,5A,26,E2,C6,7,A6,8D,0,60,8A
,80,8D,60,6F,8D,0,58,66,8D,0,53,
AE,8D,0,51,6A,8D,0,4A,27,2,20,C4
,AE,8D,0,45,30,1,AF,8D,0,3F,66,8
D,0,39,AE,8D,0,37,86,8,A7,8D,0,2
E,86,80,A7,8D,0,29,6A,8D
60 DATA 0,23,27,2,20,9E,86,D,8D,
22,86,10,A7,8D,0,15,AE,8D,0,15,3
0,88,60,AF,8D,0,E,6A,8D,0,C,27,3
,16,FF,80,39,0,0,0,0,0,0,E,6D,8D
,0,5A,27,10,10,AC,8D,0,9,27,56,8
1,D,27,52,A7,A0,39,0,0,10,9E,1B,
31,3E,10,AF,8D,0
70 DATA 3F,31,A9,0,8E,10,AF,8D,F
F,EB,31,A9,FF,74,EE,8D,0,30,EF,A
1,33,4A,EF,8D,0,28,34,2,86,87,A7
,A0,86,23,A7,A0,86,AC,A7,A0,86,3
2,A7,A0,86,2C,A7,A0,86,22,A7,A0,
86,1,A7,8D,0,5,35,2,A7,A0,39,0,0
,0,3,E8,A7,A0,34,2,86,22,A7
80 DATA A0,86,3B,A7,A0,86,0,A7,A
C,EE,8D,FF,E8,10,AF,C4,A7,A0,A7,
A0,10,9F,1B,A7,8D,FF,D9,35,2,39
```

When you have your machine language PMODE0, CLOADM it, CLOAD a program containing a picture DRAWn in PMODE0. When you have the picture you want to PRINT, press BREAK, then type NEW and EXEC16000.

Now LIST for a surprise. When you RUN this surprise, you should get a picture about 5.5cm by 4.5cm. For fun, I suggest you try this: before you EXEC,

```
POKE16026,32:POKE16161,32
```

.. also try POKE-ing 48 in to those same locations.

You probably wanted a bigger picture, right? Small ones are handy too - you can dress up letters - personalised etationery!!

I did find the poor man's SCREEN DUMP program which will give a picture nearly four times the size of the other. It will also DUMP PMODE2 and PMODE4. The poor man's DUMP takes a looooonnnggg time. (about 22 minutes at 600 BAUD, so I suppose it takes about 11 minutes at 1200 BAUD) The program was in MAY 84 RAINBOW.

```
0 GOTO5
1 'POOR MAN'S DUMP
2 '********** JOHANNA VAGG *****
3 SAVE"182DB:3":END'8
5 PMODE4:PCLS:SCREEN1,1:REM BLAC
K SCREEN FOR WHITE ON PAPER
10 REM DRAWING HERE
11 LINE(0,0)-(255,0),PSET
1000 PRINT#-2,CHR$(18):PRINT#-2,
CHR$(27)CHR$(14):REM ELONGATED G
RAPHICS
1010 FORY=0TO191STEP7:PRINT#-2,C
HR$(27)CHR$(16)CHR$(0)CHR$(112);
:FORX=0TO255:G=128:FORC=0TO6:IFY
+C<192ANDPPOINT(X,Y+C)THENG=G+2^
C
1020 NEXTC:PRINT#-2,CHR$(G);:NEX
TX:PRINT#-2,CHR$(13);:NEXTY:PRIN
T#-2,CHR$(30)
```

You can buy faster Screen Dumps. Geoff Tolputt has one which will print a picture all the way across the paper.

I have found other programs too, like BIGPRINT in JAN 84 RAINBOW. We have made lots of signs for the doors and walls here with that program. I prefer the original one to the edited version on OCTOBER 85 RAINBOW ON TAPE.

There are more, but I've been too busy (writing for CoCo!) to give them much use. Maybe I'll report on them later.

A postscript I can add in August 1986: David Law's versions of BIGPRINT in August 86 CoCo are great when used with half line feeds and condensed print. Try using inverted commas, or lower case x ... or any character you like.

August 1986 CoCoOz would be well worth getting. Thanks David.

○

SNOW FLAKE

by Bernard Besasparis

Any CoCo with ECB

THEY SAY THAT NO two snowflakes are ever identicle so I thought I would examine this proposition and sure enoguh they were right.

This little program builds random patterns resembling the crystalline structure of snow.

I believe you would have to watch it an awful ling time before you saw the same design repeat itself.

It should run on any size CoCo with ECB and is an interesting exercise in the use of DRAW strings and the ANGLE command.

The high speed POKE is only necessary for the very impatient.

The Listing:

```
0 GOTO10
1 '****** FLAKES ***************
   *** BERNARD BESASPARIS ******
3 SAVE"219A:3":END'6
10 CLEAR1000:PCLEAR8:A=RND(-TIME
R)
20 POKE65495,0
30 PMODE4,5:PCLS1:COLOR0,1
40 FORA=1TO12:S$=STR$(RND(8)):S$
=MID$(S$,2)
50 X$=X$+"U"+STR$(RND(8))+"H"+S$
+"E"+S$+"F"+S$+"G"+S$
60 NEXT
70 FORA=1TO12:S$=STR$(RND(8)):S$
=MID$(S$,2)
80 Y$=Y$+"E"+STR$(RND(8))+"U"+S$
+"R"+S$+"D"+S$+"L"+S$
90 NEXT
100 FORA=0TO3:A$="A"+STR$(A)
110 DRAWA$+"BM128,96;XX$;"
120 DRAWA$+"BM128,96;XY$;"
130 NEXT
140 PCOPY5TO1:PCOPY6TO2:PCOPY7TO
3:PCOPY8TO4
150 PMODE4,1:SCREEN1,1
160 X$="":Y$="":GOTO30
```

○

SALE OF THE CENTURY

MC–10 20K by David Hill

This is a computer copy of the TV game in which you're the contestant. Of course by the second or third run thru the answers will be obvious and top marks scored. To overcome this the listing should be adjusted by adding a new series of questions and answers.

The Listing SALE:

```
0 REM ************************
1 REM **SALE.OF.THE.CENTURY**
2 REM **     OCTOBER,1986    **
3 REM **     COMPOSED.BY     **
4 REM **     DAVID.J.HILL    **
5 REM **       AGE-15        **
6 REM ************************
7 CLS0
8 GOTO9000
9 PRINT@32,"****first round****"
10 FORR=0TO1000:NEXTR:PRINT"
                            "
11 C=20:PRINT@256,"          SCO
RE=";C:PRINT@0,"WHAT LETTER REPR
ESENTS 10 IN    ROMAN NUMERALS"
12 INPUTN$
13 IFN$="X"THEN17
14 IFN$<>"X"THEN19
15 GOSUB10000
16 GOTO21
17 GOSUB10000
18 GOSUB11000:GOTO15
19 GOSUB10000
20 PRINT@32,".....INCORRECT.....
IT'S X":SOUND50,10:C=C-5:PRINT@2
56,"          SCORE=";C:GOTO15
21 GOSUB10000
23 PRINT@0,"WHAT IS SAMUEL CLEME
NS PEN NAME"
24 INPUTN$
25 IFN$="MARK TWAIN"THEN29
26 IFN$<>"MARK TWAIN"THEN31
27 GOSUB10000
28 GOTO33
29 GOSUB10000
30 GOSUB11000:GOTO27
31 GOSUB10000
32 PRINT@32,".....INCORRECT.....
IT'S MARK    TWAIN":SOUND50,21:C
=C-5:PRINT@256,"          SCORE=
";C:GOTO27
33 GOSUB10000
35 PRINT@0,"WHAT DOES DINOSAUR M
EAN"
36 INPUTN$
37 IFN$="TERRIBLE LIZARD"THEN41
38 IFN$<>"TERRIBLE LIZARD"THEN43
39 GOSUB10000
40 GOTO45
41 GOSUB10000
42 GOSUB11000:GOTO39
43 GOSUB10000
44 PRINT@32,".....INCORRECT.....
IT'S TERRIBLE LIZARD":SOUND50,25
:C=C-5:PRINT@256,"          SCOR
E=";C:GOTO39
45 GOSUB10000
46 PRINT@0,"WHEN WAS THE RED BAR
ON KILLED"
47 INPUTN$
48 IFN$="1918"THEN52
49 IFN$<>"1918"THEN54
50 GOSUB10000
51 GOTO56
52 GOSUB10000
53 GOSUB11000:GOTO50
54 GOSUB10000
55 PRINT@32,".....INCORRECT.....
IT'S 1918":SOUND50,25:C=C-5:PRIN
T@256,"          SCORE=";C:GOTO5
0
56 GOSUB10000
57 PRINT@0,"HOW MANY KEYS ARE ON
 A PIANO"
58 INPUTN$
```

```
59 IFN$="88"THEN63
60 IFN$<>"88"THEN65
61 GOSUB10000
62 GOTO67
63 GOSUB10000
64 GOSUB11000:GOTO61
65 GOSUB10000
66 PRINT@32,".....INCORRECT.....
IT'S 88":SOUND50,25:C=C-5:PRINT@
256,"          SCORE=";C:GOTO61
67 GOSUB10000
68 PRINT@0,"****special $10 ques
tion****"
69 FORR=0TO1600:NEXTR:PRINT@0,"W
HO MADE THE 1ST STEAM ENGINE"
70 INPUTN$
71 IFN$="WAT TYLER"THEN75
72 IFN$<>"WAT TYLER"THEN77
73 GOSUB10000
74 GOTO79
75 GOSUB10000
76 PRINT@32,".....CORRECT.....":
SOUND200,10:C=C+10:PRINT@256,"
      SCORE=";C:GOTO73
77 GOSUB10000
78 PRINT@32,".....INCORRECT.....
IT'S WAT     TYLER":SOUND50,25:G
OTO73
79 GOSUB10000
80 PRINT@32,"****round two****":
FORR=0TO1000:NEXTR:PRINT@32,"
                            "
81 PRINT@0,"WHO INVENTED LOGARIT
HMS"
82 INPUTN$
83 IFN$="JOHN NAPIER"THEN87
84 IFN$<>"JOHN NAPIER"THEN89
85 GOSUB10000
86 GOTO91
87 GOSUB10000
88 GOSUB11000:GOTO85
89 GOSUB10000
90 PRINT@32,".....INCORRECT.....
IT'S JOHN    NAPIER":SOUND50,25:
C=C-5:PRINT@256,"          SCORE
=";C:GOTO85
91 PRINT@0,"WHO WROTE PETER PAN"
92 INPUTN$
93 IFN$="JAMES BARRIE"THEN97
94 IFN$<>"JAMES BARRIE"THEN99
95 GOSUB10000
96 GOTO101
97 GOSUB10000
98 GOSUB11000:GOTO95
99 GOSUB10000
100 PRINT@32,".....INCORRECT....
.IT'S JAMES   BARRIE":SOUND50,25
:C=C-5:PRINT@256,"          SCOR
E=";C:GOTO95
101 PRINT@0,"WHAT ARE LUNGS FOR"
102 INPUTN$
103 IFN$="BREATHING"THEN107
104 IFN$<>"BREATHING"THEN109
105 GOSUB10000
106 GOTO111
107 GOSUB10000
108 GOSUB11000:GOTO105
109 GOSUB10000
110 PRINT@32,".....INCORRECT....
.IT'S        BREATHING":SOUND50
,25:C=C-5:PRINT@256,"          S
CORE=";C:GOTO105
111 PRINT@0,"WHAT NATION DISCOVE
RED AUSTRALIA"
112 INPUTN$
113 IFN$="HOLLAND"THEN117
114 IFN$<>"HOLLAND"THEN119
115 GOSUB10000
116 GOTO121
117 GOSUB10000
118 GOSUB11000:GOTO115
119 GOSUB10000
120 PRINT@32,".....INCORRECT....
.IT'S HOLLAND":SOUND50,25:C=C-5:
PRINT@256,"          SCORE=";C:G
OTO115
121 PRINT@0,"WHAT'S AUSTRALIAS L
ARGEST CITY"
122 INPUTN$
123 IFN$="SYDNEY"THEN127
124 IFN$<>"SYDNEY"THEN129
```

```
125 GOSUB10000
126 GOTO131
127 GOSUB10000
128 GOSUB11000:GOTO125
129 GOSUB10000
130 PRINT@32,".....INCORRECT....
.IT'S SYDNEY":SOUND50,25:C=C-5:P
RINT@256,"          SCORE=";C:GO
TO125
131 PRINT@32,"****special $20 qu
estion":FORR=0TO1500:NEXTR:PRINT
@32,"
    "
132 PRINT@0,"WHAT IS THE VICAR O
F CHRIST"
133 INPUTN$
134 IFN$="THE POPE"THEN138
135 IFN$<>"THE POPE"THEN140
136 GOSUB10000
137 GOTO142
138 GOSUB10000
139 PRINT@32,".....CORRECT....."
:SOUND200,10:C=C+20:PRINT@256,"
          SCORE=";C:GOTO136
140 GOSUB10000
141 PRINT@32,".....INCORRECT....
.IT'S THE POPE":SOUND50,25:GOTO1
36
142 PRINT@32,"****round three***
*":FORR=0TO1000:NEXTR:PRINT@32,"
                              "
143 PRINT@0,"WHERE ARE THE ANDES
 MOUNTAINS"
144 INPUTN$
145 IFN$="SOUTH AMERICA"THEN149
146 IFN$<>"SOUTH AMERICA"THEN151
147 GOSUB10000
148 GOTO153
149 GOSUB10000
150 GOSUB11000:GOTO147
151 GOSUB10000
152 PRINT@32,".....INCORRECT....
.IT'S SOUTH   AMERICA":SOUND50,2
5:C=C-5:PRINT@256,"          SCO
RE=";C:GOTO147
153 PRINT@0,"WHERE IS THE TAJ MA
HAL"
154 INPUTN$
155 IFN$="INDIA"THEN159
156 IFN$<>"INDIA"THEN161
157 GOSUB10000
158 GOTO163
159 GOSUB10000
160 GOSUB11000:GOTO157
161 GOSUB10000
162 PRINT@32,".....INCORRECT....
.IT'S INDIA":SOUND50,25:C=C-5:PR
INT@256,"          SCORE=";C:GOT
O157
163 PRINT@0,"WHAT STATE HAS THE
GRAND CANYON"
164 INPUTN$
165 IFN$="ARIZONA"THEN169
166 IFN$<>"ARIZONA"THEN171
167 GOSUB10000
168 GOTO173
169 GOSUB10000
170 GOSUB11000:GOTO167
171 GOSUB10000
172 PRINT@32,".....INCORRECT....
.IT'S ARIZONA":SOUND50,25:C=C-5:
PRINT@256,"          SCORE=";C:G
OTO167
173 PRINT@0,"IS THE TARANTELL A
DANCE OR SONG"
174 INPUTN$
175 IFN$="DANCE"THEN179
176 IFN$<>"DANCE"THEN181
177 GOSUB10000
178 GOTO183
179 GOSUB10000
180 GOSUB11000:GOTO177
181 GOSUB10000
182 PRINT@32,".....INCORRECT....
.IT'S A DANCE":SOUND50,25:C=C-5:
PRINT@256,"          SCORE=";C:G
OTO177
183 PRINT@0,"WHAT HERO LIVED IN
A FOREST"
184 INPUTN$
185 IFN$="ROBIN HOOD"THEN189
186 IFN$<>"ROBIN HOOD"THEN191
187 GOSUB10000
188 GOTO193
189 GOSUB10000
190 GOSUB11000:GOTO187
191 GOSUB10000
192 PRINT@32,".....INCORRECT....
.IT'S ROBIN   HOOD":SOUND50,25:C
=C-5:PRINT@256,"          SCORE=
";C:GOTO187
193 PRINT@32,"****last question*
***":FORR=0TO1499:NEXTR
194 PRINT@32,"
                "
195 PRINT@32,"****special $40 qu
estion****":FORR=0TO1500:NEXTR
196 GOSUB10000
197 PRINT@0,"WHO WROTE JUNGLE BO
OK"
198 INPUTN$
199 IFN$="RUDYARD KIPLING"THEN20
3
200 IFN$<>"RUDYARD KIPLING"THEN2
05
201 GOSUB10000
202 GOTO207
203 GOSUB10000
204 PRINT@32,".....CORRECT....."
:SOUND200,10:C=C+40:PRINT@256,"
          SCORE=";C:GOTO201
205 GOSUB10000
206 PRINT@32,".....INCORRECT....
.IT'S RUDYARD KIPLING":SOUND50,2
5:GOTO201
207 FORR=0TO1500:NEXTR:CLS
208 PRINT@236,"game over"
209 FORR=0TO1500:NEXTR
210 PRINT@256,"       your score
was ";C
211 FORR=0TO2000:NEXTR
212 PRINT@288,"       your % was"
;C/165*100;"%"
220 FORR=0TO6500:NEXTR:CLS
8999 END
9000 FORB=0TO63:SET(B,0,3):NEXTB
:FORB=0TO31:SET(63,B,3):NEXTB:FO
RB=0TO31:SET(0,B,3):NEXTB:FORB=0
TO63:SET(B,31,3):NEXTB
9001 SET(1,1,3):SET(2,2,3):SET(3
,3,3):SET(4,4,3):SET(5,5,3):SET(
6,6,3):SET(1,30,3):SET(2,29,3):S
ET(3,28,3):SET(4,27,3)
9002 SET(5,26,3):SET(6,25,3):SET
(62,1,3):SET(61,2,3):SET(60,3,3)
:SET(59,4,3):SET(58,5,3):SET(57,
6,3):SET(62,30,3):SET(61,29,3)
9003 SET(60,28,3):SET(59,27,3):S
ET(58,26,3):SET(57,25,3):FORB=7T
056:SET(B,7,3):NEXTB:FORB=7TO24:
SET(56,B,3):NEXTB
9004 FORB=7TO24:SET(7,B,3):NEXTB
:FORB=7TO56:SET(B,24,3):NEXTB
9005 FORR=2TO5:SET(13,R,4):NEXTR
:SET(14,2,4):SET(14,5,4):FORR=3T
04:SET(15,R,4):NEXTR
9006 FORR=2TO5:SET(17,R,4):NEXTR
:FORR=2TO5:SET(19,R,4):NEXTR:SET
(18,2,4):SET(18,4,4):FORR=2TO4:S
ET(21,R,4):NEXTR
9007 FORR=2TO4:SET(23,R,4):NEXTR
:SET(22,5,4):FORR=25TO27:SET(R,2
,4):NEXTR:FORR=25TO27:SET(R,5,4)
:NEXTR:SET(26,3,4):SET(26,4,4)
9008 FORR=2TO5:SET(29,R,4):NEXTR
:SET(30,2,4):SET(30,5,4):SET(30,
5,4):SET(31,3,4):SET(31,4,4)
9009 FORR=2TO5:SET(35,R,4):NEXTR
:FORR=3TO4:SET(36,R,4):NEXTR:FOR
R=2TO5:SET(37,R,4):NEXTR:FORR=39
TO41:SET(R,2,4):NEXTR
9010 FORR=39TO41:SET(R,5,4):NEXT
R:FORR=3TO4:SET(40,R,4):NEXTR:FO
RR=2TO5:SET(43,R,4):NEXTR:FORR=4
3TO45:SET(R,5,4):NEXTR
9011 FORR=2TO5:SET(47,R,4):NEXTR
:FORR=47TO49:SET(R,5,4):NEXTR
9012 FORR=15TO17:SET(R,26,4):NEX
TR:FORR=19TO21:SET(R,26,4):NEXTR
:FORR=23TO25:SET(R,26,4):NEXTR:F
ORR=27TO29:SET(R,26,4):NEXTR
9013 FORR=31TO33:SET(R,26,4):NEX
TR:FORR=35TO37:SET(R,26,4):NEXTR
:FORR=39TO41:SET(R,26,4):NEXTR:F
ORR=43TO45:SET(R,26,4):NEXTR
9014 SET(15,27,4):SET(17,27,4):S
ET(19,27,4):SET(21,27,4):FORR=23
TO25:SET(R,27,4):NEXTR:SET(27,27
,4)
9015 FORR=31TO33:SET(R,27,4):NEX
TR:SET(35,27,4):SET(37,27,4):SET
(40,27,4):SET(43,27,4):FORR=15TO
17:SET(R,28,4):NEXTR
9016 SET(19,28,4):SET(20,28,4):S
ET(23,28,4):SET(29,28,4):SET(31,
28,4):SET(35,28,4):SET(37,28,4):
SET(40,28,4):SET(45,28,4)
9017 SET(15,29,4):SET(19,29,4):S
ET(21,29,4):FORR=23TO25:SET(R,29
,4):NEXTR:FORR=27TO29:SET(R,29,4
):NEXTR
9018 FORR=31TO33:SET(R,29,4):NEX
TR:SET(35,29,4):SET(37,29,4):SET
(40,29,4):FORR=43TO45:SET(R,29,4
):NEXTR:SET(47,29,4)
9019 SET(49,29,4):SET(51,29,4):S
ET(53,29,4):SET(55,29,4):SET(57,
29,4):FORX=0TO1000:NEXTX
9020 FORR=9TO11:SET(R,9,2):NEXTR
:SET(9,10,2):FORR=9TO11:SET(R,11
,2):NEXTR:SET(11,12,2):FORR=9TO1
1:SET(R,13,2):NEXTR
9021 FORR=13TO15:SET(R,9,2):NEXT
R:FORR=9TO13:SET(13,R,2):NEXTR:F
ORR=9TO13:SET(15,R,2):NEXTR:SET(
14,11,2)
9022 FORR=9TO13:SET(17,R,2):NEXT
R:FORR=17TO19:SET(R,13,2):NEXTR:
FORR=21TO23:SET(R,9,2):NEXTR:FOR
R=21TO23:SET(R,13,2):NEXTR
9023 FORR=9TO13:SET(30,R,2):NEXT
R:FORR=9TO13:SET(32,R,2):NEXTR:S
ET(31,9,2):SET(31,13,2)
9024 FORR=9TO13:SET(21,R,2):NEXT
R:SET(22,11,2)
9025 FORR=9TO13:SET(34,R,2):NEXT
R:FORR=34TO36:SET(R,9,2):NEXTR:S
ET(35,11,2):FORR=44TO46:SET(R,9,
2):NEXTR
9026 FORR=9TO13:SET(45,R,2):NEXT
R:FORR=9TO13:SET(48,R,2):NEXTR:F
ORR=9TO13:SET(50,R,2):NEXTR:SET(
49,11,2)
9027 FORR=9TO13:SET(52,R,2):NEXT
R:FORR=52TO54:SET(R,9,2):NEXTR:F
ORR=52TO54:SET(R,13,2):NEXTR:SET
(53,11,2)
9028 SET(9,22,2):SET(11,22,2):SE
T(13,22,2):SET(15,22,2):FORR=17T
019:SET(R,18,2):NEXTR:FORR=17TO1
9:SET(R,22,2):NEXTR
9029 FORR=18TO22:SET(17,R,2):NEX
TR:FORR=21TO23:SET(R,18,2):NEXTR
:FORR=21TO23:SET(R,22,2):NEXTR:F
ORR=18TO22:SET(21,R,2):NEXTR
9030 SET(22,20,2):FORR=18TO22:SE
T(25,R,2):NEXTR:FORR=18TO22:SET(
27,R,2):NEXTR:SET(26,18,2):FORR=
18TO22:SET(30,R,2):NEXTR
9031 FORR=29TO31:SET(R,18,2):NEX
TR:FORR=18TO22:SET(33,R,2):NEXTR
:FORR=18TO22:SET(35,R,2):NEXTR:S
ET(35,22,2)
9032 SET(34,22,2):FORR=37TO29:SE
T(R,18,2):NEXTR:FORR=18TO22:SET(
37,R,2):NEXTR:FORR=21TO22:SET(39
,R,2):NEXTR:SET(39,19,2)
9033 SET(38,20,2):FORR=18TO22:SE
T(43,R,2):NEXTR:FORR=18TO20:SET(
41,R,2):NEXTR:FORR=41TO43:SET(R,
22,2):NEXTR:SET(42,20,2)
9034 SET(38,18,2):SET(39,18,2):S
ET(45,22,2):SET(47,22,2):SET(47,
22,2):SET(49,22,2):SET(51,22,2):
SET(53,22,2)
9035 SOUND250,10
9036 GOTO9
10000 PRINT@0,"

                    ":RETURN
11000 PRINT@32,".....CORRECT....
.":SOUND200,10:C=C+5:PRINT@256,"
          SCORE=";C:RETURN
```

Tandy ELECTRONICS

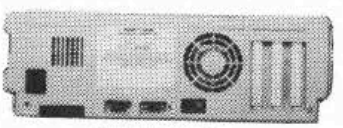
The Tandy 1000

The Computer For Home and Education

● Includes Monitor and DeskMate Software

Save $1050 Reg 2348.95 $1298

Rear View — External Connections



SPECIFICATIONS

Microprocessor: Intel 8088 processor. Clock speed, 4.77 MHz. Operating system: Includes Microsoft's advanced MS/DOS 2.11 with **BASIC Memory:** 128K RAM, expandable to 640K. **Keyboard:** 90-key sculptured, including numeric keypad. Twelve programmable Special Function keys. **Video Display:** Optional high-resolution, non-glare 30.48cm monochrome (green) or color monitor. 80 or 40 characters per line by 25 lines. High-resolution monochrome and color graphics (displaying 8 colors selected from 16). **Disk Drives:** One built-in double-sided, double density, 360K (formatted) thin-line 13-34cm mini-floppy. **48 tracks per inch. Internal Expansion: (1)** Three user-accessible IBM PC-compatible 25cm card slots. second 360K Floppy Disk Drive. **External Connections: (2)** Standard parallel printer port **(3)** Monochrome monitor. **(4)** Light pen adapter. two joysticks. **(5)** RGBI Color Monitor. **(6)** Composite video and audio. **Power:** 240 VAC. 50Hz.

This home and education computer package offers not only the exceptional capabilities of the Tandy 1000 IBM* compatible PC — it also includes DeskMate application software and the VM-Monochrome Monitor! With 128k RAM expandable to 640k and a clock speed of 4.7MHz. Phospor green VDU displays 80 x 25 text and 640 x 200 graphics. 25-1000/26-3211

DeskMate Multi-Function Disk Software

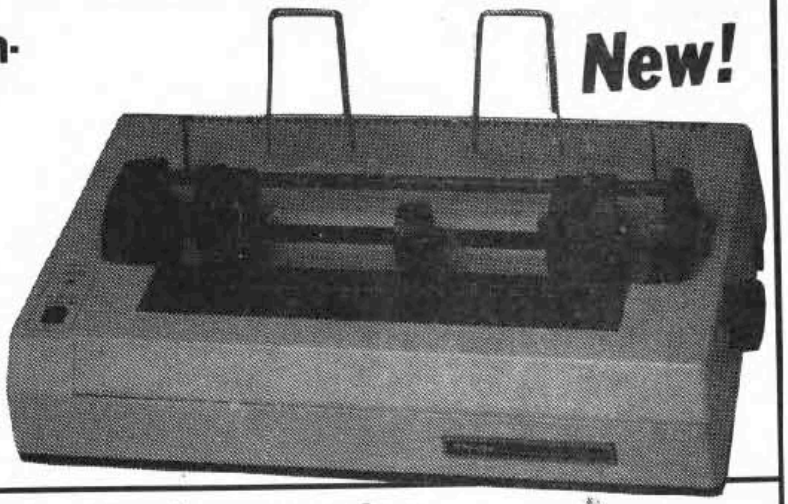
Six excellent application on one disk: **Calendar** has a diary and reminder alarm. **Text** lets you edit and compose texts with ease. **Filer** compiles and retrieves data. **Worksheet** translates intricate calculations to solutions. **Mail** for intra-computer communications. **Telecom;** using an optional modem, the user can send/receive messages via phone.

*IBM — Registered Trademark, International Business Machines Corp.

Tandy's Low-Priced High-Performance Printer!

New!

399.95



DMP 106. IBM Compatible! This Bi-directional printer is ideal for data processing and general-purpose use. Prints 80 upper and lower case characters per line (8 x 9 matrix) at 43 lines per minute at 10 characters per inch. Prints 80 characters per sec. 26-2802

Color Computer Accessories

A.

Deluxe Joystick

49.95 EACH

A. Our Best! For accurate, speedy cursor control. 26-3012

B.

Printview Ruler

9.95

B. For enlarging print. With standard measurements. 26-1313

C.

Color Mouse

79.95

C. Adds speed and ease to games and graphics creation. 26-3025

D.

Flowchart

7.95

D. Template makes all your preproduction easier. 26-1312

E.

Joysticks

34.95 PAIR

E. Budget priced joystick for fast 360° movement!

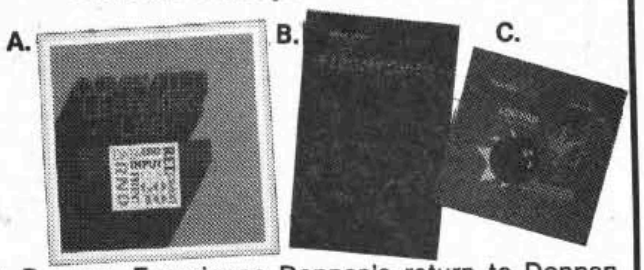
26-3008

Tandy V2123

399.95

Enjoy a whole new world in communication! Our V21/23 modem allows access into Telecom's Viatel for a host of convenient services. Also links to bulletin boards and other videotex services. 300 bits per second or 1200 bits per second receive, 75 bits per second send, 240V AC at 5 watts. It's fully Telecom approved and is so easy to install! With excellent value like this you wouldn't want to miss out! 26-9404

Colour Computer Software



A.

B.

C.

A. Donpan. Experience Donpan's return to Donpan Island. Avoid the crazy crows and saw sharks. If you successfully get "home" you'll become "King". Req. Joysticks, CoCo 2/3. 26-3097 ..... **49.95**

B. Flight Simulator 1. Sit back and prepare yourself for some exhilarating high-tech. excitement! Learn how to take-off, land, the basics of manual control and more! Req. 64k disk drive CoCo 2/3 and joystick. 26-3108 .... **69.95**

C. Color Computer Learning Lab. An excellent self-teaching standard color basic programming course. Includes 8 lessons as well as a 200 page manual! Req. cassette recorder and CoCo 2/3. 26-3153 ..... **99.95**

WE SERVICE WHAT WE SELL!

Tandy ELECTRONICS

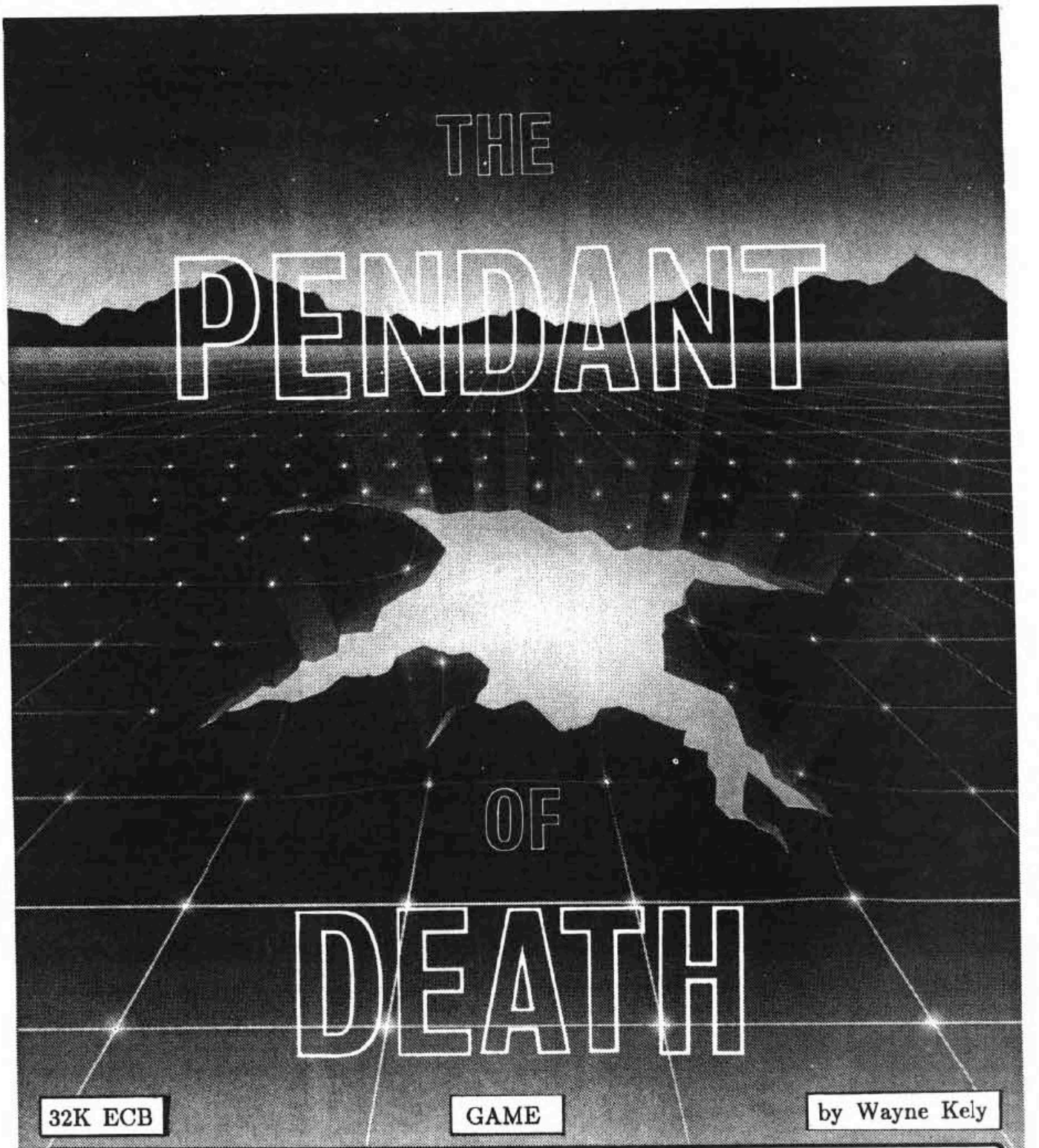
A DIVISION OF TANDY AUSTRALIA LIMITED

Nearly 350 Stores Australia-Wide

Available From 350 Stores Australiawide Including Tandy Computer Centres

or Order On VIATEL *642614#

Independent Tandy Dealers may not be participating in this ad or have every item advertised. Prices may also vary at individual Dealer Stores



32K ECB | GAME | by Wayne Kely

OK, YOU'VE HEARD of Halleys Comet. Just when you thought it was safe to look at the sky again here comes "The Pendant of Death".

The star date is 2967 A.D. The world is at a crisis point. The evil master of wizards has created a plot to destroy the earth, so his home planet can rule the galaxy.

His new weapon is the Pendant of Death which he stole from the S.A.S., 'The Sacred Artifact Society', and he is planning to use this to destroy the earth.

This pendant was forged nearly 8000 years ago in the turmoil of the 'Great Comet of 5000 B.C.'

You mission is to take a time capsule back to the past when the pendant was formed and destroy in the fire from which it came.

Intelligent Reports state that Anarchil, the evil master of the wizards has gone back in time to do his darstardly plan back in those times when the pendant was more powerful than it is now. Good luck.

Instructions: "Pendant of Death" is a 32K Adventure that uses options for you to explore the surroundings. It has several fight scenes that add to the programs overall effect. It is my first attempt at writing an adventure, so don't expect too much.

The Listing:

```
1 '*****************************
2 '*******THE DEATH PENDANT******
3 '*********BY WAYNE KELY*********
4 '********CREATED 14/4/87********
5 '*****************************
6 GOTO 10
7 SAVE"227:3":END'7
8 END
10 PCLEAR4:CLS3:PRINT@72,"THE DE
ATH PENDANT";:PRINT@234,"BY WAYN
E KELY";:PRINT@384,"INSTRUCTIONS
 (Y/N)";:INPUT YN$
20 IF YN$="Y" THEN GOTO 2610
30 IF YN$="N" THEN 50
40 GOTO 10
50 CLS:PRINT:PRINT" GOOD LUCK AN
D GO FORTH AND      RECOVER THE S
INISTER PENDANT.":FOR Y=1 TO 920
:NEXT
60 WS=10:TG=10:DN=12:AN=25:YS=15
:X=4:WL$="LIVE":TL$="LIVE":DL$="
LIVE":AL$="LIVE":N$="YOU ARE DEA
D":PD$="YES":SC$="YES"
70 T$="YOU ARE IN A LUSH GREEN F
OREST, BIRDS CHIRP LOUDLY AND TH
E SUN  SHINES DOWN ONTO THE TREE
TOPS."
80 DIM O$(X):FOR X=1 TO 4:READ O
$(X):NEXT
90 DATA IRON SWORD,BRONZE SHIELD
,MAGIC RING,SCROLL OF DEADLY DOO
M
100 ' AREA # 1
110 CLS:PRINT:PRINT T$:PRINT"YOU
 CLAMBER OUT OF YOUR TIME    CAP
SULE AND LOOK AROUND."
120 PRINT:PRINT"OPTIONS":PRINT"
 (1) GO SOUTH
 (2) INVENTORY"
130 INPUT R:ON R GOTO 150,160
140 GOTO 110
150 GOTO 180
160 PRINT"YOU ARE CARRYING:":FOR
 X=1 TO 4:PRINT O$(X):NEXT:EXEC
44539:GOTO110
170 ' AREA # 2
180 CLS:PRINT T$:PRINT"YOU HEAR
A FAINT GURGLING SOUND IN THE DI
STANCE."
190 PRINT:PRINT"OPTIONS
                  (1)  GO NORTH
                  (2)  GO SOUTH"
:INPUT R:ON R GOTO 210,220
200 GOTO 180
210 GOTO 110
220 GOTO 240
230 ' AREA # 3
240 CLS:PRINT T$:PRINT"THE GURGL
ING SOUND STARTS TO GETLOUDER AN
D LOUDER AND THEN ";:FOR Y=1 TO
420:NEXT Y:PRINT"STOPS. YOU SEE
A SIGN NAILED LOOSELY TO A TREE.
"
250 PRINT:PRINT"OPTIONS
                  (1) NORTH
                  (2) EAST
                  (3) READ SIGN"
260 INPUT R:ON R GOTO 180,300,28
0
270 GOTO 240
280 CLS:PRINT:PRINT:PRINT" THE S
IGN READS:
                              B
EWARE OF THE CRYSTAL LAKE      I
TS BEAUTY BELIES ITS TRUE      D
ANGER.  THE GUARDIAN.....":FOR Y
=1 TO 1500:NEXT Y:GOTO 240
290 ' AREA # 4
300 IF WL$="LIVE" THEN 350:IF WL
$="DEAD" THEN 310
310 CLS:PRINT T$:PRINT"THERE IS
A LARGE CRYSTAL CLEAR  LAKE."
320 PRINT:PRINT"OPTIONS
                  (1) GO NORTH
                  (2) GO EAST
                  (3) GO WEST"
330 INPUT R:ON R GOTO 600,960,24
0
340 GOTO 310
350 CLS:PRINT T$:PRINT"ALSO THER
E IS A LARGE CRYSTAL   CLEAR LAK
E.":FOR Y=1 TO 900:NEXT Y:PRINT"
SUDDENLY THE GURGLING RESTARTS
AND  REIMODOL THE WATER SERPENT
APPEARS  AND STARTS TO ATTACK."
360 PRINT:PRINT"OPTIONS
                  (1) RUN NORTH
                  (2) RUN EAST
                  (3) RUN WEST
                  (4) FIGHT REIM
ODOL"
370 INPUT R:ON R GOTO 600,960,24
0,390
380 GOTO350
390 CLS:IF WS=<0 THEN 560
400 IF YS=<0 THEN 570:PRINT:PRIN
T"          F I G H T I N G"
410 PRINT:PRINT"YOUR STRENGTH :"
;YS
420 PRINT"WATER SERPENT'S STRENG
TH:";WS
430 PRINT:PRINT"WHERE DO WISH TO
 ATTACK THE      WATER SERPENT ":
PRINT"(1) HEAD
      (2) STOMACH
      (3) BACK
      (4) TAIL"
440 INPUT FS:T=RND(5):IF T=5 THE
N GOTO 510:IF T=1 THEN 550
450 ON FS GOTO 470,480,490,500
460 GOTO 390
470 T=RND(3):PRINT"YOU BRING YOU
R BLADE DOWN ONTO  REIMODOL'S HE
AD AND HE LOSSES ";T;" STAMINA P
TS":WS=WS-T:GOTO 580
480 T=RND(3):PRINT"YOU SLASH OPE
N THE REIMODOL'S   GUT AND HE RO
ARS IN PAIN. YOU   TOOK ";T;" ST
AMINA PTS AWAY FROM  HIM.":WS=WS
-T:GOTO 580
490 T=RND(3):PRINT"YOU CRUNCH TH
E BLADE DEEP INTO  HIS BACK AND
TAKE ";T;" STAMINA PTS WITH IT":
WS=WS-T:GOTO 580
500 T=RND(3):PRINT"YOU THRUST TH
E SWORD IN TO THE  WATER SERPENT
S TAIL AND HE HAS  LOST ";T;" ST
AMINA PTS":WS=WS-T:GOTO 580
510 T=RND(3):ON T GOTO 520,530,5
40
520 T=RND(3):PRINT"THE SERPENT S
PRAYS WATER THAT   BURNS YOUR SK
IN. YOU LOSE ";T;" STAMINA PTS F
ROM IT":YS=YS-T:GOTO 580
530 T=RND(3):PRINT"REIMODOL THUM
PS YOU AGAINST THE ROCKS WITH HI
S TAIL AND LOSES   YOU";T;" STAM
INA PTS":YS=YS-T:GOTO 580
540 T=RND(3):PRINT"REIMODOL RELE
ASES A DEAFENING   ROAR THAT HUR
TS YOUR EARS. THIS LOSES YOU ";T
;" STAMINA PTS":YS=YS-T:GOTO 580
550 PRINT"YOU BOTH MISS IN YOUR
ATTEMPTS":GOTO 580
560 PRINT"YOU HAVE DEFEATED THE
WATER SER-PENT":FOR Y=1 TO 700:N
EXT Y:WL$="DEAD":GOTO 300
570 PRINT"REIMODOL HAS KILLED YO
U HE IS   NOW ENJOYING YOUR TAST
Y   HUMAN FLESH FOR HIS REWARD."
:GOTO2870
580 FOR T=1 TO 1200:NEXT:GOTO 39
0
590 ' AREA # 5
600 CLS:PRINT"YOU ARE NEAR THE E
GDE OF THE    BANDU FOREST.  AHE
AD LIES THE   GATEWAY TO A PLAIN
 THAT IS HAS  VERY FEW TREES."
610 PRINT:PRINT"OPTIONS
                  (1) GO NORTH
                  (2) GO SOUTH"
620 INPUT R:ON R GOTO 650,300
630 GOTO 600
640 ' AREA # 6
650 CLS:PRINT"YOU ARE ON A GRASS
LAND PLAIN.   THERE ARE FEW TREE
S AND NO SIGNSOF CIVILISATION AR
OUND.  YOU    DECIDE TO REST FOR
 A WHILE AND  HAVE SOMETHING TO
EAT.  YOU CAN LEAVE WHEN YOU ARE
 READY."
660 PRINT:PRINT"OPTIONS
                  (1) GO SOUTH
                  (2) GO EAST"
670 INPUT R:ON R GOTO 600,690
680 ' AREA # 7
690 CLS:PRINT"YOU ARE STANDING N
EAR A GREAT   ARCH. BEYOND IT IS
 AN EVEN MORE DESOLATE PLAIN WIT
H AN MOUNTAIN BREAKING THE FLATN
ESS, IN THE   DISTANCE. THERE IS
 A SIGN ON THEARCH PAINTED WITH
GOLD PAINT."
700 PRINT:PRINT"OPTIONS
                  (1) GO SOUTH T
HROUGH THE ARCH   (2) GO WEST
                  (3) READ SIGN
                  (4) EXAMINE TH
E ARCH"
710 INPUT R:ON R GOTO 880,650,73
0,760
720 GOTO 690
730 CLS:PRINT:PRINT"THE SIGN REA
D IN A STRANGE      LANGUAGE, BU
T YOU CAN READ IT.":PRINT"IT REA
DS..."
740 PRINT:PRINT"WHO ENTERS THE E
NDLESS PLAIN":PRINT"RICHES HAVE
BEEN FOR THE CAME":PRINT"THOSE W
HO ENTER HAVE TO LEARN":PRINT"TH
AT THEY CANNOT EVER .......":PRI
NT:PRINT"THE LAST PART YOU CAN'T
 READ"
750 EXEC44539:GOTO 690
760 PMODE 4,1:SCREEN 1,1:PCLS
770 LINE(68,68)-(92,124),PSET,B:
LINE(176,68)-(200,124),PSET,B:LI
NE(92,68)-(120,48),PSET:LINE(120
,48)-(68,68),PSET
780 LINE(148,48)-(176,68),PSET:L
INE(148,48)-(200,68),PSET:LINE(1
20,48)-(148,48),PSET
790 CIRCLE(134,48),14,,1,.5
```

```
800 LINE(92,68)-(176,68),PSET:LI
NE(92,124)-(16,192),PSET:LINE(17
6,124)-(148,192),PSET:LINE(92,12
4)-(176,124),PSET
810 PAINT(80,92),1,1:PAINT(192,8
0),1,1:PAINT(136,60),1,1:PAINT(1
16,160),1,1
820 LINE(208,100)-(240,116),PSET
,B:LINE(212,116)-(216,124),PSET,
B:LINE(232,116)-(236,124),PSET,B
830 LINE(212,104)-(236,104),PSET
:LINE(212,108)-(236,108),PSET:LI
NE(212,112)-(236,112),PSET
840 LINE(200,124)-(256,124),PSET
:LINE(68,124)-(0,124),PSET
850 FOR X=1 TO 2000:NEXT:CLS:PRI
NT:PRINT"  THE ARCH SEEMS TO BE
DRAWING  YOU NEARER, AND NEARER
WHEN YOU LOOK AT IT."
860 PRINT"  SOON IT HYNOTISES YO
U AND YOU BEGIN TO WALK THROUGH
THE ARCH.  YOU ARE NOW ON THE END
LESS       PLAIN.":FOR U=1 TO 200
0:NEXT U:GOTO 880
870 'AREA # 8
880 FOR T=1 TO 5
890 IF T=5 THEN GOTO 940
900 CLS:L$="YOU ARE ON ENDLESS P
LAIN.  THIS FEATURELESS, WIND-BL
ASTED PLAIN STRETCHES AWAY, BEYO
ND THE EVEN THE HORIZON. A LONE
MOUNTAIN     IN THE NORTH BREAKS
THE PLAINS  SMOOTHNESS."
910 PRINT L$:PRINT:PRINT"OPTIONS
                          (1) N
ORTH                      (2) S
OUTH                      (3) E
AST                       (4) W
EST"
920 INPUT R:NEXT
930 GOTO 900
940 CLS:PRINT L$:PRINT"IT HAS BE
EN THREE DAYS SINCE YOUENTERED T
HE ARCH.  YOU HAVE HAD LITTLE TO
 EAT OR DRINK, SLOVLY  YOU HAVE
FELT YOUR STRENGTH GO.  YOU HAVE
DIED.  PRESS ANY KEY.":EXEC44539
:GOTO 2870
950 ' AREA # 9
960 CLS:PRINT"YOU ARE AT THE WES
TERN EDGE OF  THE BANDU FOREST.
AHEAD LIES A  COASTAL REGION TO
THE SOUTH THATIS NOTORIOUS FOR I
TS PIRATES.   IT IS ABOUT A DAYS
 WALKING AWAY."
970 PRINT:PRINT"OPTIONS
                  (1) GO SOUTH
                  (2) GO WEST"
980 INPUT R:ON R GOTO 1010,300
990 GOTO 960
1000 'AREA # 10
1010 CLS:PRINT"YOU ARE ON THE SO
UTH COAST.  TO THE WEST THE IS A
 LARGE ISLAND. GROUNDED IN THE S
AND IS A RATHERRUN-DOWN FISHING
BOAT."
1020 PRINT:PRINT"OPTIONS
                  (1) GO NORTH
                  (2) GET IN BO
AT"
1030 INPUT R:ON R GOTO 960,1050
1040 GOTO 1010
1050 CLS:PRINT"YOU ARE IN THE BO
AT.  TWO OARS  ARE ON EITHER SID
E OF THE BOAT.  A BROKEN-DOWN ENG
INE IS A THE   REAR OF THE VESSE
L."
1060 PRINT:PRINT"OPTIONS
                  (1) GET OUT O
F THE BOAT        (2) GO TO THE
 ISLAND           (3) HEAD FOR
OPEN WATER.       (4) EXAMINE E
NGINE."
1070 INPUT R:ON R GOTO 1010,1090
,1100,1210
1080 GOTO 1050
1090 GOSUB 1130:CLS:PRINT"AFTER
A SHORT TIME YOU ARRIVE   AT THE
 ISLAND.  YOU HOP OUT OF   THE BO
AT.":FOR U=1 TO 2000:NEXT U:GOTO
 1230
1100 GOSUB 1130
1110 CLS:PRINT"AFTER A TIME YOU
FALL ASLEEP,   AFTER WHAT SEEMS
FOR EVER THE   BOAT JOLTS VIOLEN
TLY.YOU HAVE   RUN AGROUND.  SLO
WLY YOU CLIMB  OUT OF THE BOAT.
 WHILE YOU WEREOUT IN THE SUN YO
U GOT BADLY SUN-BURNT. YOU LOSE
2 STAMINA PTS.":YS=YS-2
1120 FOR U=1 TO 2500:NEXT U:GOTO
 110
1130 CLS:PRINT"YOU ARE IN THE BO
AT THE SMELL OFROTTING SEAWEED M
AKES YOU FEEL  DIZZY.":PRINT"OPT
IONS                      (
1) ROW                    (
2) START ENGINE"
1140 INPUT R:ON R GOTO 1160,1180
1150 GOTO1130
1160 PRINT:PRINT"YOU DECIDE TO R
OW THE BOAT TO   YOUR DESTINATIO
N.  THIS TAKES   GREAT PHYSICAL
STRENGTH WHICH   YOU DON'T HAVE.
  YOU LOSE 2 PTS OF STAMINA.":YS
=YS-2
1170 FOR U=1 TO 2000:NEXT U:RETU
RN
1180 T=RND(3):IF T=1 THEN 1200
1190 PRINT:PRINT"YOU TRY YOU HAR
DEST TO START    THE ENGINE BUT
TO NO AVAIL.":FOR U=1 TO 1500:NE
XT U:GOTO1160
1200 PRINT:PRINT"THE RUSTY OLD E
NGINE SPLUTTERS  AND RATTLES BUT
 STARTS.  YOU ARE GRATEFULLY THAT
 YOU DON'T HAVE  TO ROW.":FOR U=
1 TO 1500:NEXT:RETURN
1210 PRINT:PRINT"THE ENGINE IS V
ERY OLD AND IT'S COVERED IN SEAW
EED.  IT ALSO HAS AND ENGRAVEMENT
 THATS SAYS      ' MARTHA '.":FO
R U=1 TO 2000:NEXT:GOTO 1050
1220 ' AREA # 11
1230 CLS:PRINT"YOU ARE ON THE SU
N-SCORCHED     BEACH.  THE BOAT
IS AGROUND ON  THE SAND AND HAS
A LARGE HOLE INIT FROM THE IMPAC
T OF HITTING   AGAINST THE SAND.
  TO THE SOUTH AND WEST IS JUNGL
E WITH PATHS   THAT CAN BE JUST
MADE OUT."
1240 PRINT:PRINT"OPTIONS
                  (1) SOUTH
                  (2) WEST"
1250 INPUT R:ON R GOTO 1340,1260
1260 GOTO 1230
1270 'AREA # 12
1280 CLS:PRINT"YOU ARE WALKING T
HROUGH THE HOT JUNGLE.  THERE IS
 AN EERIE FEEL-ING ABOUT THIS PL
ACE.":FOR U=1 TO 2500:NEXT:PRINT
"T-R-I-P, SUDDENLY A LARGE NET
 SCOOPS YOU UP.  YOU DROP YOUR
 SWORD AND YOUR RING AS THEY SLI
PTHROUGH THE NET.  YOU WAIT."
1290 FOR U=1 TO 3200:NEXT:PRINT"
AS THE SUN SETS ALL THE ANIMALS
OF THE NIGHT COME ALIVE.
THE MOON CASTS STRANGE SHADOWS
IN THE JUNGLE.  SLOWLY YOU FALL
ASLEEP.":FOR U=1 TO 3000:NEXT U
1300 PRINT:PRINT"YOU AWAKEN TO F
IND THE SUN WELL UP.  YOU LOOK A
ROUND AND TO YOURHORROR THERE AR
E FOUR LARGE     NATIVES WITH LA
RGE SPEARS.  THEYSEEM EXCITED AB
OUT SOMETHING.   YOU SUDDENLY RE
ALISE SOMETHING  ABOUT THEM.":FO
R U=1 TO 3500:NEXT U
1310 PRINT" THEY ARE CANNABILS":
PRINT"THEY TAKE YOU BACK TO THE
TRIBE AND COOK YOU FOR THEIR DIN
NER.  YOU ARE DEAD. PRESS ANY KE
Y":EXEC44539:GOTO 2870
1320 GOTO 1280
1330 ' AREA # 13
1340 CLS:PRINT"YOU ARE IN THE TH
ICK OF THE     JUNGLE.  IT IS VE
RY DAMP AND THESWEAT DRIPS OFF Y
OUR BROW.  TO  THE WEST YOU SEE
A TEMPLE.  TO  THE SOUTH-EAST TH
ERE IS A LARGE VOLCANO."
1350 PRINT:PRINT"OPTIONS
                  (1) GO NORTH
                  (2) GO SOUTH
                  (3) GO VEST"
1360 INPUT R:ON R GOTO 1230,2140
,1390
1370 GOTO 1340
1380 ' AREA # 14
1390 IF TL$="LIVE" THEN 1440:IF
TL$="DEAD" THEN 1400
1400 CLS:PRINT"YOU ARE STANDING
AT ENTRANCE TO A TEMPLE FOR THE
CELESTIAL GOD, ARCTURUS, THIS IS
 WHERE YOUR FOEANARCHIL WILL CAR
RY OUT HIS EVILPLOT TO DESTROY T
HE EARTH."
1410 PRINT:PRINT"OPTIONS
                  (1) GO EAST
                  (2) ENTER THE
 TEMPLE"
1420 INPUT R:ON R GOTO 1340,1710
1430 GOTO 1390
1440 CLS:PRINT:PRINT"YOU ARE HID
ING IN THE BUSHES,   AT THE ENTR
ANCE TO A TEMPLE FOR THE CELESTI
AL GOD, ARCTURUS,    THIS IS WHE
RE THE EVIL ANARCHIL WILL CARRY
OUT HIS DEADLY PLAN  TO DESTROY
THE EARTH.  THERE IS A GUARD OUT
SIDE THE TEMPLE."
1450 PRINT:PRINT"OPTIONS
                  (1) GO EAST
                  (2) ENTER THE
 TEMPLE           (3) ATTACK TH
E GUARD"
1460 INPUT R:ON R GOTO 1340,1670
```

```
,1470
1470 CLS:IF TG=<0 THEN  1650
1480 IF YS<=0 THEN 1660:PRINT:PR
INT"          F I G H T I N G"
1490 PRINT:PRINT"YOUR STRENGTH :
";YS
1500 PRINT"TEMPLE GUARD'S STRENG
TH :";TG
1510 PRINT:PRINT"WHERE DO YOU WI
SH TO ATTACK THE TEMPLE GUARD":P
RINT"   (1) HEAD
        (2) STOMACH
        (3) NECK
        (4) BACK"
1520 INPUT FS:T=RND(5):IF T=2 TH
EN GOTO 1610
1530 ON FS GOTO 1550,1560,1570,1
600
1540 GOTO1470
1550 T=RND(3):PRINT"YOU BRING TH
E SWORD DOWN UPON   THE GUARD'S
HELMET AND HURT HIM, HE LOSES";T
;"STAMINA PTS":TG=TG-T:GOTO 1690
1560 T=RND(3):PRINT"YOU SLASH TH
E GUARD ACROSS HIS  GUT AND HE C
ROUCHES OVER IN HIS PAIN. HE LOS
ES";T;"STAMINA PTS":TG=TG-T:GOTO
 1690
1570 T=RND(10):IF T=5 THEN 1590
1580 PRINT"THE GUARD DUCKS YOUR
WILD SWING AND SWINGS HIS SWORD
AT YOU BUT MISSES BY A MILE.":GO
TO 1690
1590 PRINT"YOUR SWORD COMES ACRO
SS THE      GUARD'S NECK AND LOPS
 HIS HEAD  OFF":TG=TG-TG:GOTO 16
90
1600 PRINT"YOU CRUNCH YOU SWORD
IN TO THE  GUARD'S BACK BUT HIS
ARMOUR PRO-TECTS HIM":GOTO 1690
1610 T=RND(3):ON T GOTO 1620,163
0,1640
1620 T=RND(3):PRINT"THE GUARD TH
ROWS A DAGGER WHICH LODGED IN YO
UR LEG. YOU LOSE";T;" STAMINA PT
S":YS=YS-T:GOTO 1690
1630 T=RND(3):PRINT"THE GUARD SW
INGS HIS MACE AND   SLASHES YOUR
 SWORD ARM. YOU LOSE";T;"STAMINA
 PTS":YS=YS-T:GOTO1690
1640 T=RND(3):PRINT"THE GUARD PI
CKS UP A ROCK AND   HURLS IT AT
YOU. YOU TRY TO JUMPAWAY FROM IT
 BUT IF HITS YOU ON THE HEAD. YO
U LOSE";T;"STAMINA PTS":YS=YS-T:
GOTO 1690
1650 TL$="DEAD":PRINT"YOU HAVE K
ILLED THE TEMPLE GUARDYOU CAN NO
W ENTER THE TEMPLE IN SAFETY.":F
OR U=1 TO 1000:NEXT:GOTO 1390
1660 PRINT"THE TEMPLE GUARD HAS
KILLED YOU.HE HAS TAKEN ALL YOUR
 POSSESIONSAND THROWN YOUR BODY
TO THE WILDANIMALS.":FOR U=1 TO
1000:NEXT U:GOTO 2870
1670 CLS:PRINT:PRINT"THE TEMPLE
GUARD LEAPS OUT TO   STOP YOU FR
OM ENTERING THE GREATTEMPLE BUT
YOU IGNORE HIM AND   KEEP WALKIN
G.  HE BRINGS HIS    FIST UP AND
 LANDS A PUNCH TO THEBACK OF YOU
R HEAD.  YOU LOSE 1  STAMINA PT.
":YS=YS-1
1680 PRINT"YOU MUST FIGHT THE GU
ARD":FOR U=1 TO 1000:NEXT U:GOTO
1470
1690 FOR U=1 TO 1200:NEXT U:GOTO
1470
1700 ' AREA # 15
1710 CLS:IF AL$="LIVE" THEN 1860
1720 IF AL$="DEAD" THEN 1730
1730 IF PD$="YES" THEN 1790
1740 IF PD$="NO" THEN 1750
1750 CLS:PRINT"YOU ARE IN A DESE
RTED TEMPLE.   THERE IS AN OLD B
LOODSTAINED    ALTAR IN THE MIDD
LE OF IT."
1760 PRINT:PRINT"OPTIONS
                    (1) GO NORTH"
1770 INPUT R:ON R GOTO 1390
1780 GOTO 1750
1790 CLS:PRINT"YOU ARE IN A MAGN
IFICENT TEMPLE.ALL THE WALLS ARE
 OF PURE MARBLEAND AN ALTAR IN T
HE MIDDLE MADE OF GOLD. YOU SEE
THE PENDANT OF DEATH SITUATED ON
 A PILLAR OF   MARBLE."
1800 PRINT:PRINT"OPTIONS
                    (1) GO NORTH
                    (2) GET PENDAN
T"
1810 INPUT R:ON R GOTO 1390,1830
1820 GOTO 1790
1830 CLS:PRINT"YOU CAREFULLY PIC
K UP THE SACREDARTIFACT AND HOLD
 IT INTO THE   LIGHT. IT GLOWS I
N THE THIN RAY OF SUNLIGHT.  SUD
DENLY THE LARGETEMPLE  SHAKES VI
OLENTLY."
1840 PRINT"ALL THE WALLS ARE SLI
DING OF    ANOTHER EXPOSING ROTT
ING TIMBER.":FOR U=1 TO 2500:NEX
T U
1850 PD$="NO":GOTO1750
1860 CLS:PRINT"YOU ARE IN A MAGN
IFICENT TEMPLE.ALL THE WALLS ARE
 OF PURE MARBLEAND AN ALTAR IN T
HE MIDDLE MADE OF GOLD.  YOU SEE
 THE PENDANT OFDEATH SITUATED ON
 A PILLAR OF   MARBLE."
1870 PRINT"ARNACHIL SPINS AROUND
 AND CASTS A SPELL AND A MAGICAL
 SWORD     APPEARS IN HIS HAND."
1880 PRINT:PRINT"OPTIONS
                    (1) RUN NORTH
                    (2) FIGHT ANA
RCHIL"
1890 INPUT R:ON R GOTO 1910,1920
1900 GOTO 1860
1910 CLS:PRINT"YOU BEGIN TO RUN
AND ANARCHIL'S VOICE BOOMS OUT '
RUN FROM ME DO YOU YOUNG FOOL' A
ND HE PROCEEDS TO THROW HIS SWOR
D AT YOU.  HIS SWORD WAS THROWN
WITH PRECISION.YOU SLUMP ON THE
FLOOR AND DIE.":PRINT"PRESS ANY
KEY":EXEC 44539:GOTO 2870
1920 CLS:IF YS=<0 THEN 2110
1930 IF AN=<0 THEN 2100
1940 CLS:PRINT:PRINT"          F
I G H T I N G"
1950 PRINT:PRINT"YOUR STRENGTH :
";YS:PRINT"ANARCHIL'S STRENGTH :
";AN
1960 PRINT:PRINT"WHERE DO YOU WI
SH TO ATTACK HIM"
1970 PRINT:PRINT"(1) THE HEAD":P
RINT"(2) STOMACH":PRINT"(3) THE
LEGS":IF SC$="YES" THEN PRINT"(4
) USE THE SCROLL"
1980 INPUT FS:T=RND(3):IF FS=4 T
HEN 2080
1990 IF T=2 THEN 2040
2000 ON FS GOTO 2010,2020,2030:G
OTO 1920
2010 T=RND(3):PRINT"YOU SWING YO
UR SWORD AT ANARCHILAND YOU CONN
ECT HARD AND HE HAS LOST";T"STAM
INA PTS":AN=AN-T:GOTO 2120
2020 T=RND(3):PRINT"ARNACHIL DOE
S WELL TO CUT DOWN  THE SEVERITY
 OF YOU DRIVING YOURBLADE THROUG
H HIM HE MANAGES TO LOSE ONLY";T
;"STAMINA PTS":AN=AN-T:GOTO 2120
2030 T=RND(3):PRINT"YOU QUICKLY
SQUAT DOWN AND SLASHYOUR SWORD A
CROSS ANARCHIL'S    SHIN'S AND H
E GRABS ONE IN PAIN.HE LOSES";T;
"STAMINA PTS":AN=AN-T:GOTO 2120
2040 T=RND(3):ON T GOTO 2050,206
0,2070
2050 T=RND(3):PRINT"ANARCHIL CAS
TS A FIREBALL AT YOUAND YOU MANA
GE IT GET PARTLY OUTOF ITS WAY.
 IT HITS YOU ON THE ARM AND YOU
LOSE";T;"STAMINA PTS":YS=YS-T:GO
TO 2120
2060 T=RND(3):PRINT"ANARCHIL SWI
NG HIS SWORD AT YOURHEAD AND HIT
 CLIPS YOUR EAR. YOULOSES";T;"ST
AMINA PTS":YS=YS-T:GOTO2120
2070 T=RND(3):PRINT"ANARCHIL SHO
OTS LIGHTNING FROM  HIS FINGER A
ND HITS YOU DIRECTLY YOU TAKE TH
E BRUNT OF THE BLOW AND LOSE";T;
"STAMINA PTS":YS=YS-T:GOTO2120
2080 IF SC$="NO" THEN 1920
2090 CLS:PRINT"B-O-O-M, THE SCRO
LL RELEASES AN ENORMOUS AMOUNT O
F ENERGY AT THEWIZARD AND HE SCR
EAMS IN PAIN ASIT HITS HIM. HE L
OSES 10 STAMINAPTS":AN=AN-10:SC$
="NO":FOR U-1 TO 2500:NEXT U:GOT
O1920
2100 PRINT"YOU HAVE USED ALL YOU
R COURAGE  AND STRENGTH TO BANIS
H ANARCHIL TO THE FATE OF A MERE
 MORTAL ANDNOW THE PENDANT IS WI
THIN YOUR  GRASP.":FOR U=1 TO 25
00:NEXT:AL$="DEAD":GOTO 1710
2110 PRINT"ANARCHIL HAS USED HIS
 POWERFUL  MAGIC TO DESTROY YOUR
 ATTEMPTS  TO REGAIN THE PENDANT
.":PRINTN$;:FOR U=1 TO 1500:NEXT
 U:GOTO 2870
2120 FOR U=1 TO 1500:NEXT U:GOTO
 1920
2130 ' AREA # 16
2140 IF DL$="DEAD" THEN 2360:CLS
:PRINT"YOU ARE IN A LARGE VALLEY
 WITH  A TRAIL LEADING UP TO A A
CTIVE  VOLCANO. THERE IS A RED D
RAGON  HERE."
2150 CLS:PRINT"YOU ARE IN A LARG
E VALLEY WITH ATRAIL LEADING UP
TO AN ACTIVE   VOLCANO.  THERE I
S A RED DRAGON."
2160 PRINT:PRINT"OPTIONS":PRINT"
  (1) GO NORTH":PRINT"  (2) GO E
```

```
AST":PRINT"  (3) ATTACK DRAGON";
PRINT"  (4) TRY TO TALK TO THE D
RAGON"
2170 INPUT R:ON R GOTO 1340,2450
,2190,2340
2180 GOTO 2140
2190 CLS:IF DN=<0 THEN GOTO 2410
2200 IF YS=<0 THEN GOTO 2420
2210 PRINT:PRINT"          F I G
H T I N G":PRINT:PRINT"YOUR STRE
NGTH :";YS:PRINT"RED DRAGON'S ST
RENGTH :";DN
2220 PRINT:PRINT"WHERE DO YOU WI
SH TO ATTACK THE RED DRAGON":PRI
NT"  (1) HEAD":PRINT"  (2) STOMA
CH":PRINT"  (3) BACK":PRINT"  (4
) TAIL"
2230 INPUT FS:T=RND(4):IF T=2 TH
EN GOTO 2300
2240 ON FS GOTO 2260,2270,2280,2
290
2250 GOTO 2140
2260 T=RND(3):PRINT"YOU BRING YO
UR BLADE DOWN ONTO  THE BEAST'S
HEAD.  IT LOSES";T;"STAMINA PTS"
:DN=DN-T:GOTO2430
2270 T=RND(3):PRINT"YOU SLASH YO
UR SWORD ACROSS THE DRAGONS GUT
AND IT LOSES ";T;"    STAMINA PT
S":DN=DN-T:GOTO 2430
2280 T=RND(3):PRINT"YOU CRUNCH Y
OUR SWORD DEEP INTO ITS BACK AND
 IT SCREECHES IN ITSPAIN.  IT LO
SES";T;"STAMINA PTS":DN=DN-T:GOT
O 2430
2290 T=RND(3):PRINT"YOU STICK TH
E SWORD INTO ITS    TAIL AND THI
S CAUSES A HORRIBLE GREEN BLOOD
TO OOZE OUT.  IT HAS LOST";T;"STA
MINA PTS.":DN=DN-T:GOTO 2430
2300 T=RND(3):ON T GOTO 2310,232
0,2330
2310 T=RND(3):PRINT"THE DRAGON H
ITS YOU WITH A BLASTOF WHITE AND
 BLUE FIRE.  IT BURNSYOUR SKIN BA
DLY.  YOUR SWORD ARM WAS HIT.  YO
U LOSE ";T;"STAMINA PTS":YS=YS-T
:GOTO 2430
2320 T=RND(3):PRINT"THE DRAGON T
HUMPS YOU WITH HIS  TAIL, WINDIN
G YOU, AND YOU LOSE ";T" STAMINA
 PTS":YS=YS-T:GOTO 2430
2330 T=RND(3):PRINT"THE DRAGON F
LAPS HIS TWO MIGHTY WINGS AND BL
OWS ROCKS UP HITTINGYOU.  YOU LOS
E";T;"STAMINA PTS":YS=YS-T:GOTO
24302340 CLS:PRINT"YOU TRY TO CO
MMUNICATE WITH THE DRAGON.  IT S
AYS IT IS FROM THE BROTHERHOOD O
F ANSONI, THESE AREANARCHIL'S EN
EMY'S AND THEY SENTTHE DRAGON TO
 GIVE ME A POTION.  HE GIVES YOU
A CANNISTER.  YOU  DRINK IT AND
IT INCREASES YOUR"
2350 PRINT"STRENGTH BY 5 STAMINA
 PTS.  HE   SAYS GOOD-BYE AND FLI
ES AWAY.":YS=YS+5:DL$="DEAD":PRI
NT"PRESS ANY KEY":EXEC44539
2360 CLS:PRINT"YOU ARE IN A LARG
E VALLEY WITH ATRAIL LEADING UP
TO A ACTIVE    VOLCANO. THERE IS
 A STRANGE FEEL-ING IN THE AIR."
2370 PRINT:PRINT"OPTIONS"
2380 PRINT"  (1) GO NORTH":PRINT
"  (2) GO WEST"
2390 INPUT R:ON R GOTO 1340,2450
2400 GOTO 2360
2410 CLS:PRINT"YOU HAVE DESTROYE
D THE DRAGON  AND ALL THE KNOWL
EDGE YOU COULD HAVE GAINED FROM
IT.":FOR U=1 TO 1500:NEXT U:DL$=
"DEAD":GOTO 2140
2420 CLS:PRINT"THE RED DRAGON HA
S KILLED YOU INDEPENDING ITSELF.
":FOR U=1 TO 1500:NEXT U:GOTO 28
70
2430 FOR U=1 TO 1200:NEXT U:GOTO
 2190
2440 ' AREA # 17
2450 CLS:PRINT"YOU ARE AT THE BA
SE OF A VOLCANOTHE TOP OF THE VO
LCANO IS SMOULD-ERING AND THERE
IS AN ABUNDANCE OF PLANT LIFE AR
OUND."
2460 IF PD$="NO" THEN 2500
2470 PRINT:PRINT"OPTIONS":PRINT"
  (1) GO WEST"
2480 INPUT R:ON R GOTO 2140
2490 GOTO 2450
2500 PRINT:PRINT"OPTIONS":PRINT"
  (1) GO WEST":PRINT"  (2) CLIMB
 TO TOP OF VOLCANO":INPUT R:ON R
 GOTO 2140,2530
2510 GOTO 2450
2520 ' AREA # 18
2530 CLS:PRINT"YOU ARE AT THE TO
P OF THE GIANT VOLCANO.  THE SUL
PHUR FUMES ARE NEARLY BECOMING B
UT YOU MANAGE  TO OVERCOME THEM.
  THE LAVA  BE-LOW IS BUBBLING F
URIOUSLY."
2540 PRINT:PRINT"OPTIONS":PRINT"
  (1) CLIMB DOWN THE VOLCANO":PR
INT"  (2) CAST THE PENDANT IN TH
E   LAVA"
2550 INPUT R:ON R GOTO 2450,2570
2560 GOTO 2530
2570 CLS:PRINT"YOU CAST THE PEND
ANT IN TO THE  RED-HOT LAVA AND
AS IT HITS THE LAVA THE VOLCANO
FILLS WITH A   BRILLIANT BLUE LI
GHT, AND THE   IMAGES OF DEMONS
AND COMETS ALSOAPPEAR AND THEN T
HE LIGHT FADES AND SO DO THE IMA
GES."
2580 PRINT:PRINT" C O N G R A T
U L A T I O N S"
2590 PRINT" WELL DONE, YOU HAVE
SAVED EARTH AND DESTROYED THE EV
IL ANARCHIL IN THE PROCESS.  YOU
 HAVE GONE  DOWN IN EARTH'S HIST
ORY BOOKS ASONE OF THE GREAT ADV
ENTURERS.":END
2600 END
2610 CLS
2620 PRINT:PRINT"  IN THE YEAR 5
000 B.C. EARTH   ENCOUNTERED A N
EAR COLLISION    WITH A LARGE CO
MET.  ON THE     NIGHT OF THE CO
METS CLOSEST     APPROACH THE EA
RTH WAS NEARLY   DESTROYED.  THE
 TREMENDOUS FORCEROCKED THE PLAN
ET CAUSING A     EXPLOSION";
2630 PRINT" FROM DEEP WITHIN THE
  EARTHS CORE.":PRINT:EXEC44539:
PRINT"FROM THIS THE PENDANT OF D
EATH  VAS FORGED.  YOUR MISSION
IS TO RECOVER THE PENDANT AND DE
STROY IT BEFORE ANARCHIL, THE MA
STER  OF WIZARDS, TAKES IT TO DE
STROY YOUR LAND."
2640 PRINT"HERE IS THE HOLOGRAM
OF  THE    PENDANT.":EXEC 44539
2650 PMODE 4,1:PCLS:SCREEN 1,1
2660 LINE(92,64)-(92,164),PSET
2670 LINE(148,64)-(148,164),PSET
2680 CIRCLE(120,64),36
2690 LINE(148,64)-(120,124),PSET
2700 LINE(120,124)-(92,64),PSET
2710 CIRCLE(120,132),8
2720 LINE(120,124)-(120,140),PSE
T
2730 LINE(112,132)-(128,132),PSE
T
2740 PAINT(122,129),1,1
2750 PAINT(118,133),1,1
2760 LINE(116,128)-(124,136),PSE
T,B
2770 LINE(120,192)-(148,164),PSE
T
2780 LINE(120,192)-(92,164),PSET
2790 PAINT(120,64),1,1
2800 LINE(148,64)-(256,0),PSET
2810 LINE(148,164)-(256,192),PSE
T
2820 LINE(92,164)-(0,192),PSET
2830 LINE(92,64)-(0,0),PSET
2840 PAINT(212,108),1,1
2850 PAINT(40,120),1,1
2860 EXEC 44539:CLS:PRINT:PRINT"
YOU HAVE TO GO BACK INTO TIME
AND DESTROY THE PENDANT BEFORE
ANARCHIL RECALLS THE COMET TO
DEVASTATE THE EARTH.":EXEC44539:
GOTO 50
2870 PRINT:PRINT" THE EVIL ANARC
HIL AND HIS EVIL LEGIONS OF DEST
RUCTION HAVE    SUCCEEDED IN RE
GAINING THE POWEROF THE PENDANT.
  AT THE PRESENT MOMENT YOUR PLA
NET IS NOW BEING TORN APART BY T
HE LEGENDARY    COMET.  YOU HAV
E FAILED IN YOUR QUEST."
2880 PRINT:PRINT"DO YOU WISH TO
CHANCE YOURSELF  AGAIN (Y/N)":IN
PUT YN$:IF YN$="Y"THEN RUN:IF YN
$="N"THEN END
```

Hint ...

Poltergeist

If you're tired of being sent back to the start everytime you lose a man, press and hold the fire button down - this prevents the cars from moving and lets you get screen 1 over and done with quickly.

ADDITION OF A FRACTION

32K ECB
EDUCATION

by Bob Horne

THIS IS THE follow up program to "Idea of a Fraction". I have included a tutorial on the types dealt with.

This tutorial is an extension of the way that I demonstrate the sums to the class. The grape, lime and orange were used because of their colours and the colours available on the graphics screen and also because of the fact that they have short names.

I was very particular in this tutorial to put on the screen any words about the lime in green, about the orange in orange etc.

If you do not wish to have the tutorial in your program, then leave out lines 101 to 150.

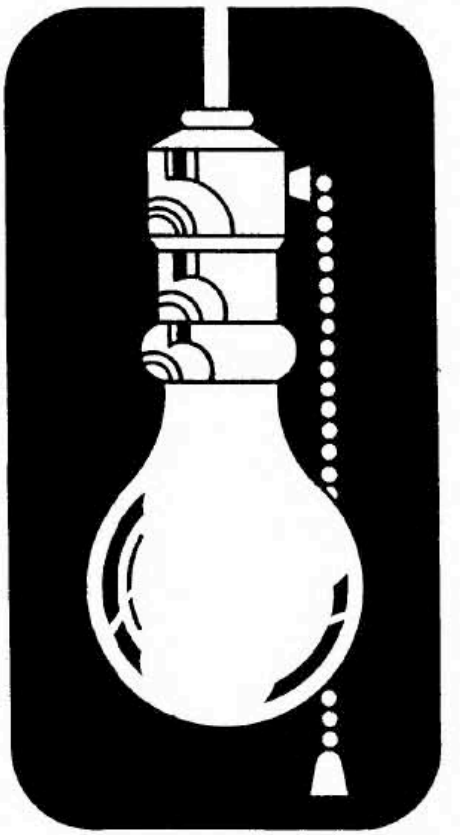
I think the most important part in this program comes at the end of a session. In this section, the names of those who too often asked for help, or who made too many mistakes are printed on the screen.

I have found this section a great help to me in deciding who uses which program next time.

The "ZZZZ" in line 290 acts as a password. Alter it if you wish. To put in your own class names, just alter the data in line 314. If you have a different number of children in your class, then alter the value of TL in line 7.

When running this program on a DISK system with 23 names, there is less than 1K of free memory. So, if you need more room then you can free up about another 1K by deleting all the REMarks.

If you have my program on "Compound Words", you will no doubt recognise the rocket and launching pads which I have resurrected for this series. The rocket appears in the next two programs as well, albeit doing different things.



Although I use this program in Year 5, I see no reason why it can't be used at other levels.

The Listing:

```
0 GOTO7
1 REM*****************************
2 REM*        ADDITION           *
3 REM*      OF FRACTIONS         *
4 REM*      BY BOB HORNE         *
5 REM*****************************
6 SAVE"87:3":END
7 PCLEAR4:CLEAR500:TL=23:DIM C$,W
$,CH$(58),R(10),RD(10),Z(8),FR(2
0),FB(20),N$(TL),R$(TL),TT(4),HL
(8):CLS:PRINT@197,"ADDITION OF F
RACTIONS.";:PRINT@271,"BY";:PRIN
T@331,"BOB HORNE.";:SCREEN0,1
8 FORZ=0TO58:READCH$(Z):NEXTZ:FO
RZ=1TO TL:READN$(Z):NEXTZ:FORZ=1
TO TL:R$(Z)=STRING$(4,32):NEXTZ:
P$="L16T16P16":P1$="T12V15O3CEGO
4L2CO3L4GO4L2C":P2$="L6T6P6":A=R
ND(-TIMER)
9 PMODE2,1:COLOR5,0:PCLS:DRAW"BM
2,14UE2F2DUH2UR2U7F2D3L2U6H2G2D6
L2U3E2D7R2":GET(0,0)-(10,18),R,G
:PCLS
10 FORX=15TO225STEP51:LINE(X,86)
-(X+20,88),PSET,BF:LINE(X,91)-(X
+20,94),PSET,BF:FORY=89TO90:PSET
(X+5,Y):PSET(X+15,Y):NEXTY,X:LIN
E(0,95)-(255,95),PSET
11 FORX=21TO225STEP51:PUT(X,70)-
(X+10,84),R,PSET:NEXTX:FORX=1TO5
0:PSET(RND(255),RND(76)):NEXTX:P
COPY1TO3:PCOPY1TO4:PCLS5:GOTO79
12 REM***DIVIDE UP TO PRINT*****
13 IF LEN(C$)<=L THENW$=C$:GOSUB
18:RETURN
14 FORT=L TO1STEP-1:IF MID$(C$,T
,1)=" "THEN16
15 NEXTT
16 W$=LEFT$(C$,T):GOSUB18:C$=RIG
HT$(C$,(LEN(C$))-T):GOTO13
17 REM****TO GRAPHICS SCREEN****
18 IF SC=1 THEN24 ELSEDRAW"S=S;C
=C1;BM"+STR$(X1)+","+STR$(Y1)
19 FORI=1TOLEN(W$)
20 F=ASC(MID$(W$,I,1))-32
21 DRAWCH$(F)+"BR3"
22 NEXTI:Y1=Y1+Y2:RETURN
23 REM******TO TEXT SCREEN******
24 PRINTW$:RETURN
25 REM*****DRAW A FRACTION*****
26 A5$=STR$(A5):B1$=STR$(B2):A5$
=RIGHT$(A5$,LEN(A5$)-1):B1$=RIGH
T$(B1$,LEN(B1$)-1):L5=LEN(A5$):L
6=LEN(B1$)
27 IF L5=L6 THEN A7=X:B6=X ELSE
IF L5=1 AND L6=2 THEN A7=X+6:B6=
X ELSE IF L5=2 AND L6=1 THEN A7=
X:B6=X+6
28 DRAW"C=C1;":IF K<>0 THEN29 EL
SEX1=A7:C$=A5$:GOSUB13
```

```
29 IF L5=2 AND L6=1 THEN LINE(A7
-2,Y1+5)-(A7+20,Y1+5),PSET ELSE
LINE(B6-2,Y1+5)-(B6+L6*10+2,Y1+5
),PSET
30 X1=B6:Y1=Y1+19:C$=B1$:GOSUB13
:Y1=Y1-11:RETURN
31 REM*CHECK IF IN LOWEST TERMS
32 FORZ=B1 TO2 STEP-1
33 IF B2/Z=INT(B2/Z) AND D2/Z=IN
T(D2/Z) THEN CD=CD/Z:B2=B2/Z
34 NEXTZ:RETURN
35 REM******INPUT A NUMBER*****
36 IN$=INKEY$
37 IN$=INKEY$:IF IN$<>"" THEN39
ELSE PLAYP$:DRAW"S8C5BM73,14U3NU
2R3U2D5C=C1;":LINE(X1,Y1-8)-(X1+
6,Y1),PSET,BF
38 PLAYP$:DRAW"C6BM73,14U3NU2R3U
2D5C=C1;":LINE(X1,Y1-8)-(X1+6,Y1
),PRESET,BF:GOTO37
39 IF IN$="H" AND H1=0 THENGOSUB
44:GOTO36
40 IF ASC(IN$)<48 OR ASC(IN$)>57
 THEN37
41 IF IN$=MID$(AN$,TT,1) THENC$=
IN$:GOSUB13:PLAYP1$:RETURN
42 WA=WA+1:X=X1:Y=Y1:X1=38:Y1=CG
+15:S1=S:S=8:C$="SORRY TRY AGAIN
":GOSUB13:PLAY"O1":FORZ=1TO4:PLA
Y"T250O+V30DFDGD":NEXTZ:GOSUB70:
LINE(35,CG+4)-(218,CG+16),PRESET
,BF:X1=X:Y1=Y:S=S1:GOTO36
43 REM*****HELP ASKED FOR******
44 H1=1:X3=X1:Y3=Y1:X1=130:HL(H)
=HL(H)+1:ON H GOTO45,48,49,49,48
,56,57,57
45 B5$=STR$(B):B6$=STR$(D):B5$=R
IGHT$(B5$,LEN(B5$)-1):B6$=RIGHT$
(B6$,LEN(B6$)-1):C1=8:Y1=Y3+20:I
F TZ<5 THEN C$="IT'S IN THE":GOS
UB13:Y1=Y1+14:C$="SUM.":GOSUB13:
GOTO47 ELSE C$="TRY "+B5$+"X"+B6
$
46 IF B*D=CD THENGOSUB13:GOTO47
ELSEB7=B*D/CD:B7$=STR$(B7):B7$=R
IGHT$(B7$,LEN(B7$)-1):C$=C$+"/"+
B7$:GOSUB13
47 C1=8:X1=X3:Y1=Y3:RETURN
48 S=8:C$="ADD WHOLES.":GOSUB13:
X1=X3:Y1=Y3:DRAW"C=C1;":S=12:RET
URN
49 X=130:IF H=3 THEN A5=A:B2=B:L
S$=STR$(CD/B):LS=LEN(LS$) ELSE A
5=C:B2=D:LS$=STR$(CD/D):LS=LEN(L
S$)
50 GOSUB26:IF L5=2 AND L6=1 THEN
 X1=A7+25 ELSE X1=B6+L6*10+7
51 C$="=":GOSUB13:Y1=Y1-3:X5=X1+
15:IF L5=1 ANDL6=2 THENX1=X5+6:E
LSE X1=X5
52 IF LS=2 AND L6=1 THEN X4=X1+5
6 ELSE IF LS=3 AND L6=1 THEN X4=
X1+68 ELSE IF LS=2 AND L6=2 THEN
 X4=X1+56 ELSE X4=X1+80
53 LINE(X5,Y1)-(X4,Y1),PSET:C$=A
5$+" X"+LS$
54 Y1=Y1-5:GOSUB13:X1=X5:Y1=Y1+1
9:C$=B1$+" X"+LS$
55 GOSUB13:X1=X3:Y1=Y3:DRAW"C=C1
;":RETURN
56 X1=90:Y1=Y1+5:C$="ADD NUMERAT
ORS":GOSUB13:DRAW"C=C1;":X1=X3:Y
1=Y3:RETURN
57 X1=100:S=8:C$=A3$+"/"+CD$+"=1
 R "+A4$:GOSUB13:X1=X3:IF H=7 TH
EN S=12:RETURN ELSE RETURN
58 REM******GET NEXT PAGE******
59 DRAW"C6":LINE(0,176)-(255,191
),PSET,BF:X1=50:Y1=188:C1=5:C$="
PRESS <ENTER>.":GOSUB13:IN$=INKE
Y$
60 IN$=INKEY$:IF IN$<>CHR$(13) T
HEN60 ELSE X1=0:RETURN
61 REM*******DRAW GRAPES*******
62 FORX=0TO Z-1:CIRCLE(X*20+X3,Y
3),10,7,1.5:PAINT(X*20+X3,Y3),7,
7:DRAW"C6BM"+STR$(X*20+X3)+","+S
TR$(Y3-15)+"U3":NEXTX:RETURN
63 REM*******DRAW A LIME*******
64 FORX=0TO Z-1:CIRCLE(X*50+X3,Y
3),20,6:PAINT(X*50+X3,Y3),6,6:DR
AW"C8BM"+STR$(X*50+X3)+","+STR$(
Y3-20)+"E3":NEXTX:RETURN
65 REM******DRAW AN ORANGE*****
66 FORX=0TO Z-1:CIRCLE(X*70+X3,Y
3),30,8:PAINT(X*70+X3,Y3),8,8:DR
AW"C6BM"+STR$(X*70+X3)+","+STR$(
Y3-30)+"E3":NEXTX:RETURN
67 REM*FLASH WORD TO BE ALTERED
68 GET(G,H)-(I,J),FR,G:FORX=1TO1
0:PUT(G,H)-(I,J),FR,PSET:PLAYP$:
PUT(G,H)-(I,J),FB,PSET:PLAYP$:NE
XTX:RETURN
69 REM**********DELAY**********
70 FORZ=1TO1500:NEXTZ:RETURN
71 REM***<ENTER> TEXT SCREEN***
72 PRINT@484,"PRESS <ENTER> TO C
ONTINUE.";:IN$=INKEY$
73 IN$=INKEY$:IF IN$<>CHR$(13) T
HEN73 ELSE RETURN
74 REM*********DRAW BOX*********
75 DRAW"C8":LINE(0,120)-(255,170
),PSET,B:RETURN
76 REM*********CLEAR BOX*********
77 LINE(2,122)-(253,168),PRESET,
BF:RETURN
78 REM*****MIXED OR COMMON*****
79 CLSRND(6)+2:PRINT@192,"WOULD
YOU LIKE MIXED NUMBERS OR JUST C
OMMON FRACTIONS? PLEASE  TYPE <
M> OR <C>":IN$=INKEY$
80 IN$=INKEY$:IF IN$="" THEN80 E
LSE IF IN$="C" THEN TY=1 ELSE IF
 IN$="M" THEN TY=2 ELSE80
81 REM*****CHOOSE A TYPE*******
82 L=31:CLS:SC=1:C1$=" - FRACTIO
N ADDITION ":C2$=" LESS THAN 1."
:C3$=" GREATER THAN 1.":X=128:PR
INT@0,STRING$(3,X);"which"CHR$(X
)"kind"CHR$(X)"would"CHR$(X)"you
"CHR$(X)"like"STRING$(4,X);:POKE
1052,46
83 C$="1) LIKE DENOMINATORS"+C1$
+C2$:GOSUB13:POKE1056,49
84 C$="2) SAME AS 1"+C1$+C3$:GOS
UB13:POKE1120,50
85 C$="3) ONE DENOMINATOR A FACT
OR OF THE OTHER"+C1$+C2$:GOSUB13
:POKE1184,51
86 C$="4) SAME AS 3"+C1$+C3$:GOS
UB13:POKE1280,52
87 C$="5) UNLIKE DENOMINATORS"+C
1$+C2$:GOSUB13:POKE1344,53
88 C$="6) SAME AS 5"+C1$+C3$:GOS
UB13:POKE1408,54
89 C$="7) A MIXTURE OF THE ABOVE
.":GOSUB13:POKE1472,55
90 X=128:PRINT@480,CHR$(X)CHR$(X
)"please"CHR$(X)"type"CHR$(X)"a"
CHR$(X)"number"STRING$(3,X)"to"S
TRING$(4,X);:POKE1505,42:POKE152
7,49:POKE1532,55:POKE1533,46:POK
E1535,32:IN$=INKEY$
91 IN$=INKEY$:IF IN$="" THENPOKE
1534,42:PLAYP2$:POKE1534,106:PLA
YP2$:GOTO91 ELSE IF ASC(IN$)<49
OR ASC(IN$)>55 THEN91
92 TA=VAL(IN$):CLS
93 REM********GET NAME*********
94 INPUT"TYPE YOUR FIRST NAME, A
 SPACE   AND THE INITIAL OF YOUR
 LAST    NAME:- ";N$:FORZ=1TO TL
:IF N$=N$(Z) THEN TS=Z:Z=TL:NEXT
Z:GOTO97
95 NEXTZ:PRINT"SORRY, THAT NAME
IS NOT ON THE  LIST. TYPE THAT A
GAIN PLEASE.":GOSUB70:GOTO94
96 REM*******TUTORIAL*********
97 SC=0:COLOR5,8:PMODE1,1:PCLS:S
CREEN1,1:L=22:S=8:Y2=14:PCLS:X1=
20:Y1=10:C1=8:C$="BEFORE YOU CAN
 ADD FRACTIONS TOGETHER THEY MUS
T HAVE THE SAME NAME - THAT IS T
HEY MUST HAVE THE SAME DENOMINAT
OR.":GOSUB13
98 GOSUB59:PCLS:X1=10:Y1=10:C1=8
:C$="IF THEY DO NOT HAVE THE SAM
E DENOMINATOR THEN YOU MUST CHAN
GE ONE - OR BOTH - SO THAT THEY
ARE THE SAME.":GOSUB13:GOSUB59
99 PCLS:X1=10:Y1=10:C1=8:C$="TO
DO THIS FIND THE SMALLEST NUMBER
 THAT BOTH DENOMINATORS WILL DIV
IDE INTO.":GOSUB13
100 Y1=Y1+10:C1=7:C$="THIS IS CA
LLED FINDING THE LEAST COMMON DE
NOMINATOR (L.C.D.)":GOSUB13:GOSU
B59
101 IF TA=7 THEN150
102 PCLS:L=23:Y1=60:C1=7:C$="DO
YOU WANT TO SEE THE LESSON FOR Y
OUR KIND OF SUM?":GOSUB13:Y1=Y1+
10:C1=8:C$="PLEASE TYPE <Y> OR <
N>.":GOSUB13:IN$=INKEY$
103 IN$=INKEY$:IF IN$="N" THEN15
3 ELSE IF IN$<>"Y" THEN103
104 REM****INTRO. TO DEMOS.****
105 PCLS:Y1=10:C1=8:C$="IN THE F
OLLOWING WE WILL USE GRAPES LIME
S AND AN ORANGE TO DEMONSTRATE T
HE FRACTIONS.":GOSUB13
106 X3=20:Y3=125:Z=1:GOSUB62:X3=
80:Y3=125:Z=1:GOSUB64:X3=170:Y3=
125:Z=1:GOSUB66:GOSUB59
107 LINE(0,0)-(255,80),PRESET,BF
:LINE(0,174)-(255,191),PRESET,BF
108 Y2=14:X1=0:Y1=10:C1=7:C$="A
GRAPE WILL REPRESENT ONE-TENTH."
:GOSUB13:A5=1:B2=10:Y2=0:X=10:Y1
=152:GOSUB26
109 Y2=14:X1=0:Y1=40:C1=6:C$="A
LIME WILL REPRESENT ONE-FIFTH.":
GOSUB13:Y2=0:X=107:Y1=120:B2=5:G
OSUB26
110 Y2=15:X1=0:Y1=70:C1=8:C$="TH
E ORANGE WILL REPRESENT ONE-HALF
.":GOSUB13:Y2=0:X=207:Y1=120:B2=
2:GOSUB26:GOSUB59
111 LINE(0,0)-(255,85),PRESET,BF
:LINE(0,174)-(255,191),PRESET,BF
:Y2=15:Y1=15:C1=6:C$="A LIME IS
WORTH 2 GRAPES.":GOSUB13:LINE(60
```

```
,95)-(120,150),PRESET,BF:X3=60:Y
3=125:Z=2:GOSUB62:GOSUB70
112 C1=8:C$="AN ORANGE IS WORTH
5 GRAPES.":GOSUB13:LINE(130,85)-
(230,160),PRESET,BF:X3=140:Y3=12
5:Z=5:GOSUB62:GOSUB70
113 C1=6:C$="LET'S SWAP GRAPES F
OR TENTHS.":GOSUB13:GOSUB70:G=0:
H=17:I=70:J=32:GOSUB68:C1=7:C$="
TENTHS":Y2=0:X1=0:Y1=30:GOSUB13:
A5=2:B2=10:X=60:Y1=152:GOSUB26
114 G=0:H=47:I=70:J=62:GOSUB68:X
1=0:Y1=60:C$="TENTHS":GOSUB13:A5
=2:B2=10:X=60:Y1=152:C1=7:GOSUB2
6:A5=5:X=173:Y1=152:GOSUB26:GOSU
B59:PCLS
115 ON TA GOTO117,117,124,124,13
7,137,153
116 REM******TYPES 1 AND 2*****
117 X3=10:Y3=20:Z=3:GOSUB62:X3=1
60:Z=2:GOSUB62:Y2=15:X1=0:Y1=50:
C1=7:C$="3 GRAPES + 2 GRAPES":
GOSUB13:C1=6:C$="THE ANSWER IS 5
 GRAPES":GOSUB13
118 GOSUB70:Y1=Y1+10:C1=8:C$="LE
T'S SWAP GRAPES FOR TENTHS":GOSU
B13:Y2=0:G=20:H=38:I=90:J=53:GOS
UB68:X1=20:Y1=50:C1=7:C$="TENTHS
":GOSUB13:G=165:I=240:GCSUB68:X1
=G:GOSUB13
119 G=185:H=54:I=255:J=69:GOSUB6
8:X1=G:Y1=Y1+15:GOSUB13:LINE(0,8
0)-(255,110),PRESET,BF:X=20:Y1=8
0:A5=3:C1=7:B2=10:GOSUB26:X1=50:
C$="+":GOSUB13:Y1=80:A5=2:X=70:G
OSUB26
120 X1=0:Y1=125:C$="=":GOSUB13:Y
1=115:A5=5:X=20:GOSUB26:L=18:Y2=
14:X1=70:Y1=125:C1=8:DRAW"C8":LI
NE(58,105)-(255,165),PSET,B:C$="
IN A SUM LIKE THIS THE L.C.D. IS
 PRESENT.":GOSUB13:GOSUB70
121 LINE(60,107)-(253,163),PRESE
T,BF:X1=70:Y1=125:C1=8:C$="TO FI
ND THE ANSWER JUST ADD THE NUMER
ATORS.":GOSUB13:GOSUB59
122 GOTO153
123 REM******TYPES 3 AND 4*****
124 PCLS:L=22:Y2=14:X3=20:Y3=25:
Z=2:GOSUB64:X3=170:Y3=30:Z=1:GOS
UB62:X1=0:Y1=60:C1=6:C$="2 LIMES
 +":GOSUB13:X1=155:Y1=60:C1=7:
C$="1 GRAPE":GOSUB13:X1=0:C1=8:C
$="YOU CANNOT ADD THESE BECAUSE
THEY DO NOT HAVE THE SAME NAME."
:GOSUB13
125 GOSUB70:C1=6:C$="LET'S SWAP
THE 2 LIMES FOR 4 GRAPES.":GOSUB
13:GOSUB70
126 LINE(0,0)-(90,60),PRESET,BF:
LINE(0,174)-(255,191),PRESET,BF:
X3=10:Z=4:GOSUB62:X1=0:Y1=60:C1=
7:C$="4 GRAPES":GOSUB13:LINE(0,6
5)-(255,160),PRESET,BF:Y2=0:Y1=8
5:C1=6:C$="THE ANSWER IS":GOSUB1
3:Y2=14:X1=160:C1=7:C$="5 GRAPES
":GOSUB13
127 GOSUB70:X1=0:Y1=100:C1=8:C$=
"LET'S SWAP GRAPES FOR TENTHS.":
GOSUB13:G=20:H=48:I=90:J=65:GOSU
B68:Y2=0:X1=G:Y1=61:C1=7:C$="TEN
THS":GOSUB13:G=170:I=240:GOSUB68
:X1=175:C$="TENTH":GOSUB13
128 G=175:H=70:I=255:J=88:GOSUB6
8:X1=180:Y1=85:C$="TENTHS":GOSUB
13:LINE(0,90)-(255,125),PRESET,B
F:Y2=14:X1=0:Y1=105:C1=8:C$="WHA
T WE HAVE DONE IS LIKE THE SUM":
GOSUB13
129 Y2=0:Y1=140:C1=6:A5=2:B2=5:X
=20:GOSUB26:X1=40:C1=8:C$="+":GO
SUB13:X=60:Y1=140:C1=7:A5=1:B2=1
0:GOSUB26:GOSUB59
130 PCLS:Y1=20:C1=6:A5=2:B2=5:X=
20:GOSUB26:X1=40:C1=8:C$="+":GOS
UB13:X=60:Y1=20:C1=7:A5=1:B2=10:
GOSUB26:GOSUB75:Y2=14:X1=7:Y1=13
7:C1=6
131 C$="WE SWAPPED THE 2 LIMES F
OR 4 GRAPES.":GOSUB13:GOSUB70:GO
SUB77:Y1=137:C$="SWAP THE 2-FIFT
HS FOR 4-TENTHS.":GOSUB13:GOSUB7
0
132 Y2=0:X1=0:Y1=65:C1=8:C$="=":
GOSUB13:X=20:Y1=55:C1=7:A5=4:B2=
10:GOSUB26:X1=60:C1=8:C$="+":GOS
UB13:X=85:Y1=55:C1=7:A5=1:GOSUB2
6:GOSUB70:GOSUB77
133 Y2=14:X1=30:Y1=137:C1=8:C$="
NOW ADD THE NUMERATORS TO GET 5-
TENTHS.":GOSUB13:X1=0:Y1=100:C1=
7:C$="=":GOSUB13:Y2=0:X=20:Y1=90
:A5=5:GOSUB26:GOSUB59
134 PCLS:L=23:Y2=14:Y1=20:C1=8:C
$="IN THE KIND OF SUM YOU JUST S
AW THE FIRST DENOMINATOR (5) WAS
 A FACTOR OF THE SECOND (10).":G
OSUB13:Y1=Y1+10:C1=6:C$="ALTER T
HE FIRST FRACTION SO THAT IT HAS
 THE SAME DENOMINATOR AS THE SEC
OND.":GOSUB13:GOSUB59
135 GOTO153
136 REM*******TYPES 5 AND 6*****
137 PCLS:L=22:X3=20:Y3=55:Z=2:GO
SUB64:X3=200:Y3=45:Z=1:GOSUB66:Y
2=14:X1=0:Y1=90:C1=6:C$="2 LIMES
 +":GOSUB13:X1=155:Y1=90:C1=8:
C$="1 ORANGE":GOSUB13:X1=0:Y1=Y1
+5:C1=7:C$="YOU CANNOT ADD THESE
 BECAUSE THEY DO NOT HAVE THE SA
ME NAME.":GOSUB13
138 GOSUB59:LINE(0,95)-(255,191)
,PRESET,BF:Y1=120:C1=6:C$="LET'S
 SWAP THE 2 LIMES FOR 4 GRAPES."
:GOSUB13:GOSUB70:LINE(0,0)-(90,9
2),PRESET,BF:X3=10:Y3=60:Z=4:GOS
UB62
139 Y1=90:C1=7:C$="4 GRAPES":GOS
UB13:GOSUB70:LINE(0,95)-(255,140
),PRESET,BF:Y1=120:C1=6:C$="SWAP
 THE ORANGE FOR 5 GRAPES.":GOSUB
13:GOSUB70:LINE(145,0)-(245,92),
PRESET,BF
140 X3=150:Y3=60:Z=5:GOSUB62:X1=
155:Y1=90:C1=7:C$="5 GRAPES":GOS
UB13:GOSUB70:LINE(0,95)-(255,180
),PRESET,BF:X1=0:Y1=110:C1=6:C$=
"THE ANSWER IS":GOSUB13:X1=160:Y
1=110:C1=7:C$="9 GRAPES":GOSUB13
141 GOSUB70:X1=0:Y1=130:C1=8:C$=
"NOW SWAP GRAPES FOR TENTHS.":GO
SUB13:G=20:H=78:I=90:J=92:GOSUB6
8:Y2=0:X1=20:Y1=90:C1=7:C$="TENT
HS":GOSUB13:G=170:I=245:GOSUB68:
X1=175:GOSUB13
142 G=180:H=98:I=255:J=113:GOSUB
68:X1=180:Y1=110:GOSUB13:GOSUB70
:LINE(0,115)-(255,150),PRESET,BF
:Y2=14:X1=0:Y1=130:C1=8:C$="WHAT
 WE HAVE DONE IS":GOSUB13:Y1=Y1+
10:C$="LIKE THE SUM":GOSUB13
143 Y2=0:X=170:Y1=150:C1=6:A5=2:
B2=5:GOSUB26:X1=190:C1=8:C$="+":
GOSUB13:X=210:Y1=150:A5=1:B2=2:G
OSUB26:GOSUB59:PCLS:X=26:Y1=20:C
1=6:A5=2:B2=5:GOSUB26:X1=48:C1=8
:C$="+":GOSUB13:X=71:Y1=20:A5=1:
B2=2:GOSUB26
144 GOSUB75:Y2=14:X1=15:Y1=137:C
1=6:C$="WE SWAPPED THE 2 LIMES F
OR 4 GRAPES.":GOSUB13
145 GOSUB70:GOSUB77:X1=5:Y1=137:
C$="SWAP THE 2-FIFTHS FOR 4-TENT
HS.":GOSUB13:GOSUB70:Y2=0:X1=0:Y
1=65:C1=8:C$="=":GOSUB13:X=20:Y1
=55:C1=7:A5=4:B2=10:GOSUB26:X1=4
8:Y1=65:C1=8:C$="+":GOSUB13
146 GOSUB77:Y2=14:X1=4:Y1=137:C1
=8:C$="WE SWAPPED THE ORANGE FOR
 5 GRAPES.":GOSUB13:GOSUB70:GOSU
B77:X1=15:Y1=137:C1=6:C$="NOW SW
AP THE 1-HALF FOR 5-TENTHS.":GOS
UB13:GOSUB70
147 Y2=0:X=65:Y1=55:C1=7:A5=5:B2
=10:GOSUB26:GOSUB70
148 GOSUB77:Y2=14:X1=15:Y1=137:C
1=8:C$="ADD THE NUMERATORS.":GOS
UB13:GOSUB70:Y2=0:X1=0:Y1=100:C$
="=":GOSUB13:X=20:Y1=90:C1=7:A5=
9:GOSUB26:GOSUB70:LINE(0,120)-(2
55,170),PRESET,BF:GOSUB59
149 PCLS:Y2=14:X1=10:Y1=15:C1=8:
C$="IN THE EXAMPLE WE JUST SAW,
THE L.C.D. WAS NOT PRESENT.":GOS
UB13:Y1=Y1+10:C$="BOTH FRACTIONS
 WERE ALTERED TO A COMMON DENOMI
NATOR.":GOSUB13:GOSUB59
150 PCLS:X1=10:Y1=14:C1=7:IF TA=
7 THENC$="IN SOME CASES THE L.C.
D. IS PRESENT.":GOSUB13:Y1=Y1+10
151 C1=8:C$="IN MOST CASES, THE
L.C.D. CAN BE FOUND BY MULTIPLYI
NG THE DENOMINATORS - GETTING TH
EIR PRODUCT":GOSUB13:GOSUB59
152 PCLS:Y1=14:C1=8:C$="SOMETIME
S IN A SUM, THE L.C.D. IS LESS T
HAN THE PRODUCT OF THE TWO DENOM
INATORS.":GOSUB13:Y1=Y1+10:C1=7:
C$="E.G. IF THE TWO DENOMINATORS
 ARE 4 AND 6 THEIR PRODUCT IS 24
 BUT THE L.C.D. IS 12.":GOSUB13:
GOSUB59
153 IF TA=7 THEN154 ELSE IF TA/2
<>INT(TA/2) THEN157
154 PCLS:L=23:Y1=10:C1=7:C$="IF
THE ANSWER IS AN IMPROPER FRACTI
ON YOU MUST CHANGE IT TO A MIXED
 NUMERAL.":GOSUB13
155 Y2=0:Y1=Y1+20:C1=8:C$="SAY T
HE ANSWER IS":GOSUB13:Y1=Y1-10 X
=220:A5=15:B2=11:GOSUB26:Y1=Y1+4
0:X1=0:C$="THIS IS EQUAL TO":GOS
UB13:S=12:X1=220:C$="1":GOSUB13
156 S=8:Y1=Y1-12:A5=4:X=234:GOSU
B26:GOSUB59
157 PCLS:L=23:Y2=14:C1=8:IF TY=2
 THENY1=50:C$="IF YOU HAVE WHOLE
 NUMBERS IN THE SUM, ADD THEM FI
RST AND THEN PROCEED AS USUAL.":
GOSUB13:GOSUB59:PCLS:C1=8
158 Y1=75:C$="WOULD YOU LIKE TO
SEE THAT AGAIN?":GOSUB13:Y1=Y1+1
```

```
0:C$="PLEASE TYPE <Y> OR <N>.":G
OSUB13:IN$=INKEY$
159 IN$=INKEY$:IF IN$="Y" THEN97
 ELSE IF IN$<>"N" THEN159
160 REM*GENERATE THE FRACTIONS*
161 PCLS:L=22:S=8:NU=0:WA=0:FORZ
=1TO8:HL(Z)=0:NEXTZ
162 C1=8:X1=0:Y1=90:C$="JUST A M
OMENT PLEASE.":GOSUB13:IF TA=7 T
HEN TZ=RND(6) ELSETZ=TA
163 ON TZ GOTO164,164,171,171,17
8,178
164 B=RND(19)+1:A=RND(B-1):C=RND
(B-1)
165 IF TZ=1 ANDA/B+C/B=>1 THEN16
4
166 IF TZ=2 AND A/B+C/B=<1 THEN1
64
167 B1=A:B2=A:D2=B:CD=B:GOSUB32:
IF CD<>B THEN164
168 B1=C:B2=C:D2=B:CD=B:GOSUB32:
IF CD<>B THEN164
169 A1=A:A2=C:A3=A+C:D=B:IF TZ=2
 THEN A4=A+C-D
170 GOTO189
171 B=RND(8)+1:A=RND(B-1):D=B*(R
ND(4)+1):C=RND(D-1)
172 IF TZ=3 AND A/B+C/D=>1 THEN1
71
173 IF TZ=4 AND A/B+C/D=<1 THEN1
71
174 CD=B:B1=A:B2=A:D2=B:GOSUB32:
IF CD<>B THEN171
175 CD=D:B1=C:B2=C:D2=D:GOSUB32:
IF CD<>D THEN171
176 A1=A*D/B:A2=C:A3=A1+A2:IF TZ
=4 THEN A4=A3-CD
177 GOTO189
178 B=RND(9)+1:A=RND(B-1):D=RND(
9)+1:C=RND(D-1)
179 IF B/D=INT(B/D) OR D/B=INT(D
/B) THEN178
180 IF TZ=5 AND A/B+C/D=>1 THEN1
78
181 IF TZ=6 AND A/B+C/D=<1 THEN1
78
182 CD=B:B1=A:B2=A:D2=B:GOSUB32:
IF CD<>B THEN178
183 CD=D:B1=C:B2=C:D2=D:GOSUB32:
IF CD<>D THEN178
184 IF B<D THEN B1=B:B2=B:D2=D E
LSE IF D<B THEN B1=D:B2=D:D2=B
185 CD=B*D:GOSUB32
186 IF CD>50 THEN178
187 A1=CD/B*A:A2=CD/D*C:A3=A1+A2
:IF TZ=6 THEN A4=A3-CD
188 REM***PUT THE SUM ON SCREEN
189 PCLS:Y2=0:LINE(0,0)-(255,17)
,PSET,BF:LINE(68,2)-(185,15),PRE
SET,BF:X1=73:Y1=14:C1=6:C$="H FO
R HELP":GOSUB13
190 K=0:DRAW"C6":CG=170:LINE(0,C
G)-(255,CG+20),PSET,BF:LINE(35,C
G+4)-(218,CG+16),PRESET,BF:NU=NU
+1:Z(1)=20:Z(2)=34:Z(3)=36:Z(4)=
38:Z(5)=42:Z(6)=46:Z(7)=49:Z(8)=
52:IF TY=1 THEN193
191 W1=RND(4):W2=RND(4):AW=W1+W2
:W1$=STR$(W1):W2$=STR$(W2):AW$=S
TR$(AW):W1$=RIGHT$(W1$,LEN(W1$)-
1):W2$=RIGHT$(W2$,LEN(W2$)-1):AW
$=RIGHT$(AW$,LEN(AW$)-1)
192 X1=15:Y1=Z(6):C1=6:S=12:C$=W
1$:GOSUB13:S=8
193 IF TY=1 THEN X=15 ELSE X=30
194 Y1=Z(2):A5=A:B2=B:GOSUB26
195 IF L6=1 THEN X1=X+20 ELSE X1
=X+30
196 C1=7:C$="+":GOSUB13:X1=X1+20
197 IF TY=1 THEN199
198 Y1=Z(6):C1=8:S=12:C$=W2$:GOS
UB13:S=8:X1=X1+20
199 X=X1:Y1=Z(2):C1=8:A5=C:B2=D:
GOSUB26
200 X1=130:Y1=45:C1=6:H=1:H1=0:C
$="L.C.D.=":GOSUB13
201 CD$=STR$(CD):CD$=RIGHT$(CD$,
LEN(CD$)-1):LN=LEN(CD$):AN$=CD$:
IF LN=1 THEN X2=240 ELSE X2=252
202 DRAW"C7":LINE(223,Y1-15)-(X2
,Y1+3),PSET,B:C1=8
203 REM*****GET THE L.C.D.*****
204 FORTT=1TO LN
205 X1=226+(TT-1)*10
206 GOSUB36
207 NEXTTT:LINE(223,Y1-15)-(X2,Y
1+3),PRESET,B:IF H1=1 THEN LINE(
130,Y1+5)-(255,Y1+40),PRESET,BF
208 FORZ=1TO8:Z(Z)=Z(Z)+36:NEXTZ
:X1=0:Y1=Z(5):C1=8:C$="=":GOSUB1
3
209 REM********2ND. LINE********
210 IF TZ<3 THEN237
211 A1$=STR$(A1):A1$=RIGHT$(A1$,
LEN(A1$)-1):LA=LEN(A1$)
212 IF TY=1 THENX=15:GOTO214
213 DRAW"C7":LINE(13,Z(1))-(27,Z
(7)),PSET,B:X1=30:Y1=Z(5):C1=7:C
$="+":GOSUB13:X=45
214 K=1:Y1=Z(2):C1=6:A5=A1:B2=CD
:GOSUB26:P1=A7:X1=X+LN*10+10:C1=
7:C$="+":GOSUB13
215 IF TZ=3 OR TZ=4 THEN K=0 ELS
E K=1
216 X=X1+20:Y1=Z(2):C1=8:A5=A2:B
2=CD:GOSUB26:P2=A7
217 IF TY=1 THEN219 ELSEK1=15:Y1
=Z(6):C1=8:S=12:H=2:H1=0:TT=1:C1
=8:AN$=AW$:GOSUB36:S=8:LINE(13,Z
(1))-(27,Z(7)),PRESET,B
218 IF H1=1 THENLINE(130,Z(6)-10
)-(255,Z(6)),PRESET,BF
219 K=0:Y1=Z(2):C1=6:DRAW"C7":LI
NE(P1-2,Z(1))-(P1+LA*10,Z(3)),PS
ET,B:H=3:H1=0:AN$=A1$
220 REM*****FIRST NUMERATOR*****
221 FORTT=1TO LA
222 X1=P1+(TT-1)*10
223 GOSUB36
224 NEXTTT:LINE(P1-2,Z(1))-(P1+L
A*10,Z(3)),PRESET,B
225 IF H1=1 THEN LINE(127,Z(3)-1
4)-(255,Z(3)+19),PRESET,BF
226 REM****SECOND NUMERATOR*****
227 IF TZ=3 OR TZ=4 THEN235
228 A2$=STR$(A2):A2$=RIGHT$(A2$,
LEN(A2$)-1):LA=LEN(A2$):AN$=A2$
229 DRAW"C7":LINE(P2-2,Z(1))-(P2
+LA*10,Z(3)),PSET,B:C1=8:H=4:H1=
0
230 FORTT=1TO LA
231 X1=P2+(TT-1)*10
232 GOSUB36
233 NEXTTT:LINE(P2-2,Z(1))-(P2+L
A*10,Z(3)),PRESET,B
234 IF H1=1 THEN LINE(127,Z(3)-1
4)-(255,Z(3)+19),PRESET,BF
235 FORZ=1TO8:Z(Z)=Z(Z)+36:NEXTZ
:X1=0:Y1=Z(5):C1=8:C$="=":GOSUB1
3
236 REM*******THIRD LINE*******
237 A3$=STR$(A3):A3$=RIGHT$(A3$,
LEN(A3$)-1):LA=LEN(A3$):IF TY=1
THENP1=15:GOTO241
238 IF TZ=>3 THENX1=15:Y1=Z(6):C
$=AW$:S=12:GOSUB13:P1=45:S=8
239 IF TZ=2 OR TZ=4 OR TZ=6 THEN
 X1=30:Y1=Z(5):C1=7:C$="+":GOSUB
13:P1=45 ELSEP1=30
240 IF TZ=1 OR TZ=2 THENDRAW"C7"
:LINE(13,Z(1))-(27,Z(7)),PSET,B
241 X=P1:Y1=Z(2):C1=8:A5=A3:K=1:
B2=CD:GOSUB26:K=0:P1=A7
242 IF TY=1 THEN245
243 IF TZ<3 THENX1=15:Y1=Z(6):C1
=6:S=12:H=5:H1=0:AN$=AW$:TT=1:GO
SUB36:S=8:LINE(13,Z(1))-(27,Z(7)
),PRESET,B ELSE245
244 IF H1=1 THEN LINE(130,Z(6)-1
0)-(255,Z(6)),PRESET,BF
245 C1=8:DRAW"C7":LINE(P1-2,Z(1)
)-(P1+LA*10+2,Z(3)),PSET,B:H=6:H
1=0:AN$=A3$:Y1=Z(2)
246 REM******GET NUMERATOR******
247 FORTT=1TO LA
248 X1=P1+(TT-1)*10
249 GOSUB36
250 NEXTTT:LINE(P1-2,Z(1))-(P1+L
A*10+2,Z(3)),PRESET,B
251 IF H1=1 THENLINE(85,Y1-5)-(2
55,Y1+7),PRESET,BF
252 IF TZ=1 OR TZ=3 OR TZ=5 THEN
271
253 FORZ=1TO8:Z(Z)=Z(Z)+36:NEXTZ
:X1=0:Y1=Z(5):C1=8:C$="=":GOSUB1
3
254 REM********LAST LINE********
255 A4$=STR$(A4):A4$=RIGHT$(A4$,
LEN(A4$)-1):LA=LEN(A4$)
256 X=30:Y1=Z(2):C1=8:K=1:A5=A4:
B2=CD:GOSUB26:K=0:P1=A7
257 DRAW"C7":LINE(13,Z(1))-(27,Z
(7)),PSET,B
258 IF TY=1 THEN AN$="1" ELSE AW
=AW+1:AW$=STR$(AW):AW$=RIGHT$(AW
$,LEN(AW$)-1):AN$=AW$
259 REM***GET THE WHOLE NUMBER**
260 X1=15:Y1=Z(6):S=12:H=7:H1=0:
TT=1:GOSUB36:S=8:LINE(13,Z(1))-(
27,Z(7)),PRESET,B
261 AN$=A4$
262 DRAW"C7":Y1=Z(2):LINE(P1-2,Z
(1))-(P1+LA*10+2,Z(3)),PSET,B:H=
8
263 REM****GET THE NUMERATOR****
264 FORTT=1TO LA
265 X1=P1+(TT-1)*10
266 GOSUB36
267 NEXTTT
268 LINE(P1-2,Z(1))-(P1+LA*10+2,
Z(3)),PRESET,B
269 IF H1=1 THEN LINE(100,Y1-15)
-(255,Y1+15),PRESET,BF
270 REM*****MADE IT THROUGH*****
271 X1=38:Y1=CG+15:C$="CONGRATUL
ATIONS":GOSUB13:GOSUB70:PCLS
272 PMODE2,1:PCLS5:SCREEN1,1:PCO
PY3TO1:PLAY"T100L100O1V30CFDEGV2
2ABGFV14GABDV7EFABGEDA"
273 R1=21+(NU-1)*51:FORZ=66TO2ST
EP-1:PUT(R1,Z)-(R1+10,Z+18),R,PS
```

```
RT:NEXTZ:FORZ=1TO16:GET(R1,2)-(R
1+10,20),RD,G:PUT(R1,0)-(R1+10,1
8),RD,PSET:NEXTZ
274 FORZ=1TO500:NEXTZ:PCOPY1TO3:
PCLS:PMODE1,1:SCREEN1,1
275 IF NU<5 THEN162
276 REM*******NEXT PLAYER*******
277 L=23:Y2=0:X1=50:Y1=73:C1$="N
EXT PLAYER":FORZ=1TO LEN(C1$):C1
=RND(3)+5:C$=MID$(C1$,Z,1):GOSUB
13:X1=X1+12:NEXTZ:FORZ=1TO1000:N
EXTZ278 X1=38:Y1=95:C1$="PRESS <
ENTER>":FORZ=1TO LEN(C1$):C1=RND
(3)+5:C$=MID$(C1$,Z,1):GOSUB13:X
1=X1+12:NEXTZ:Y2=15:C1=8:X1=0:Y1
=160:C$="PRESS <E> TO END SESSIO
N.":GOSUB13:IN$=INKEY$
279 REM*****WHO NEEDS HELP?*****
280 IF HL(1)>2 THEN MID$(R$(TS),
1,1)="*":TT(1)=TT(1)+1
281 IF TZ=3 OR TZ=4 AND HL(3)>2
THEN MID$(R$(TS),2,1)="*":TT(2)=
TT(2)+1
282 IF TZ=5 OR TZ=6 AND HL(3)+HL
(4)>4 THEN MID$(R$(TS),2,1)="*":
TT(2)=TT(2)+1
283 IF HL(7)+HL(8)>2 THEN MID$(R
$(TS),3,1)="*":TT(3)=TT(3)+1
284 IF WA>3 THEN MID$(R$(TS),4,1
)="*":TT(4)=TT(4)+1
285 IN$=INKEY$:IF IN$="E" THEN28
9 ELSE IF IN$<>CHR$(13) THEN285
286 PCOPY4TO3:CLS:GOTO94
287 REM*******<E> PRESSED*******
288 REM*****WAS IT TEACHER******
289 CLS
290 INPUT"TYPE YOUR FIRST NAME,
A SPACE   AND THE INITIAL OF YOU
R LAST    NAME:-";N$:IF N$<>"ZZZ
Z" THENPRINT"SORRY, THAT NAME IS
 NOT ON THE  LIST. TYPE THAT AGA
IN PLEASE.":GOSUB70:GOTO290
291 REM*******PRINT NAMES*******
292 CLS:SC=1:FORZ1=1TO4
293 IF TT(Z1)=0 THENC$="NO-ONE N
EEDS HELP IN " ELSE IF TT(Z1)=1
THEN C$="THIS USER NEEDS HELP IN
 " ELSE C$="THESE USERS NEED HEL
P IN "
294 IF Z1=1 THEN C2$="FINDING TH
E L.C.D.." ELSE IF Z1=2 THEN C2$
="EQUIVALENT FRACTIONS." ELSE IF
 Z1=3 THEN C2$="CHANGING IMPROPE
R FRACTIONS TO MIXED NUMERALS."
ELSEC2$="TABLES."
295 L=31:C$=C$+C2$:GOSUB13:IF TT
(Z1)=0 THEN GOSUB72:GOTO299
296 X=0:FORZ=1TO TL:IF MID$(R$(Z
),Z1,1)="*" THENPRINTN$(Z):X=X+1
297 IF X<>0 AND X/10=INT(X/10) T
HENGOSUB72:CLS
298 NEXTZ:PRINT"THERE ARE NO MOR
E NAMES.":GOSUB72
299 CLS:NEXTZ1
300 REM*******RUN AGAIN?*******
301 CLS:PRINT"<R>UN PROGRAM AGAI
N OR <E>ND":PRINT:PRINT"PLEASE T
YPE <R> OR <E>.":IN$=INKEY$
302 IN$=INKEY$:IF IN$="R" THEN R
UN ELSE IF IN$<>"E" THEN302
303 CLS:END
304 REM*****CHARACTER DATA******
305 DATABR2,BR2UBU2U2BRBD5,BU5ND
BR3DBD4,BRUNLU3NLNURNUNED3NLNRDB
R,BRUNLREHL2URNUR2BD4,BR3NUBL3UE
3UBL3DBD4BR3,BRHENF2HEFGBD2REBD,
BU5BRRDGBD3BR2,BR2HU3EBRBD5,BREU
3HBD5BR2,BRBUE3BD3NH3BDBR,BU3BR2
DNLNRDBDBR
306 DATABRUNRDRNUDGBU2BR2,BRBU2R
2BD2,BRRULDBR2,BUBRRBU2NL3NR2BU2
LBD5BR3,BRHU3ERFD3GLBR2,R2U5NLD5
R
307 REM***UE3UBD5
308 DATA NR3UEREU2LLGBD4BR3,BUFR
EUHNLEUL3BD5BR3,BR3U5D3L3UE2RBD5
,BUFREUHL2U2R3BD5,BUNUFREUHLGU2E
RBD5BR,BU4UR3D2G3BR3,BUNUFREUHLN
GHERFGBD3BR,BRREU3HLGDFRRBD3,BR2
UBU2UBD4BR
309 DATABR2URD2GBU5URDLBD3BR,BR2
H2UE2BD5BR,BRBUNR2BU2R2BD3,BRE2U
H2BD5BR2,BR2UBUUREHL2BD5BR3,,U2N
R3U2ERFD4
310 DATA U3NR2U2R2FGFDGL2BR3,BUU
3ERFBD3GLHBDBR3,U5RF2DG2LBR3,NR3
U3NR2U2R3BD5,U3NR2U2R3BD5,BUU3ER
BRBD3NLDGLHBDBR3,U3NU2R3NU2E3,BR
U5BD5BR2,BUFEU4NRL2BD5BR3,U5D2RE
2G2F2D,NU5R3,U5F2NDE2D5,U5F3U3D5
311 DATABRHU3ERFD3GLBR2,U5R2FDGL
2BD2BR3,BUU3ERFD3NHNFGLHBDBR3,U5
R2FGL2F3,BUFREUHL2UERFBD4
312 DATA BRU5LR3BD5,NU5R3U5BD5,B
U5D3FDRUEU3BD5,NU5E2NUF2NU5,UE2H
2BR3DGFD2,BU5D2FRD2NLU2EU2BD5,NR
3UE3UL3ED5BR3
313 REM*******CLASS NAMES*******
314 DATANIGEL B,TRENT B,DANIEL B
,GRANT B,RYAN C,TROY C,JOHN D,KE
RRY E,GAVIN G,SCOTT G,MATTHEW H,
CHRIS K,PAUL L,BRENDAN L,SCOTT M
,DAMON O,DUC P,BRENDAN P,KEN R,A
DAM R,JUSTIN R,SEAN R,JOHN T
```

Australian Bush Songs

16K ECB MUSIC

by Mal McLaughlan

IN THE EARLY days of Australian history, long before radios and record players made us lazy, settlers had to make their own music.

Many of the songs brought from the "old country" were inappropriate, or too sophisticated for the simple mouth organs, button accordians, flutes and stringed instruments of the day, and so new, simple songs were written or just "grew" to their present accepted form of tune and words.

I have found that the old Australian bush ballads fit in very well to the simple 1-part capability of the CoCo, and I have programmed a large number of folk songs and shanties which I listen to with great enjoyment.

It seems that few of the hard working settlers and miners knew much about chords, and were happy to whistle or hum the tunes as they panned for gold or sat around the camp-fire.

Let's keep those days alive, especially through the bi-centennial year (1988), even if we have to do it with that modern miracle, the tune-humming computer!

Here are three old tunes that you can quickly learn to hum yourself.

The Listing:

```
1 '****AUSTRALIAN BUSH SONGS****
*****SET BY MAL MCLAUCHLAN******
**********APRIL, 1987**********
2 GOTO 10
3 SAVE"215:3":END'7
10 CLS2:PRINT@228,"THE COCKIES O
F BUNGAREE";
20 PLAY"T4O2L8AO3L4DL8DL4DL8DL4D
L8DL4F#L8F#L4EL8EL8DL8DL4.DL8DP8
"
30 PLAY"O3L8F#L4GL8GL4GL8F#L4EL8
EL4EL8DC#C#C#L4AL8AL4.AL8AP8"
40 PLAY"O3L16AAL4BL8BL4BL8AL4GL8
F#L4EL8EL4AL8AL4AL8GL4.F#L8F#P8"
50 PLAY"O2L16AAO3L8DDDL4DL8EL4F#
L8GL4AL8GL4F#L8DL4EL8C#L4.DL4D"
60 PLAY"P1"
70 CLS2:PRINT@237,"JACK";
80 FOR RPT=1 TO 2
90 PLAY"T2O3L8DF#L16AAAAL8BBL16A
L8.F#L16DL8.F#L8ABL16AL8.F#L4E"
100 PLAY"O3L8DF#L16AAL8ABBL16AL8
.F#L8.DL16EL8FL16EDL8EDO2L4B"
110 PLAY"O2L16BBO3L8DO2L16AAO3L8
DF#BAF#L16EL8EL16EL8F#L8EL4.DP8"
120 NEXT RPT
130 PLAY"P1"
140 PLAY"P1":CLS2:PRINT@200,"O G
IVE ME A HUT";
150 PLAY"T2O3L8DO2BO3DDEDDO2BO3D
GB"
160 PLAY"O3L16BBO4L8CO3EEL16AAL8
BAAGEL4D"
170 PLAY"O3L16DDO2L8BO3DDEDDO2BO
3DGL4B"
180 PLAY"O3L16BBO4L8CO3EEL4AL16A
AL8ABAL2G"
190 CLS2:PRINT@233,"T H E  E N D
";
200 GOTO 200
```

CoCo 3 Program

TATTSLOTTO DRAW

by David McKeand

TATTSLOTTO DRAW is an application which chooses your tattslotto numbers in a different way!

The computer draws a grid with numbers ranging from 1 to 46 inside each box. Each number picked is coloured in green.

The border of the screen is filled with optimism, ie around the edge of the screen the word "WIN".

So with all these great features, who says that you're not going to win?

The Listing:

```
0 GOTO10
3 SAVE"162:3":END'10
10 'TATTSLOTO DRAW by David Mcke
and , Hobart
20 'Something like 10% of winnin
gs would be nice !
100 POKE&HFFD9,0:'HIGH SPEED POK
E ; POKE&HFFD8,0 RETURNS TO NORM
AL
200 ONBRK GOTO7100:'ONERR GOTO95
00
300 WIDTH40:CLS6
400 L$=STRING$(14,CHR$(20)):LOCA
TE13,1:ATTR6,6:PRINTL$
500 L1$=STRING$(13,CHR$(20)):LOC
ATE27,1:ATTR5,5:PRINT L1$
600 LOCATE13,2:ATTR6,6,B,U:PRINT
"TATTSLOTO DRAW"
700 LOCATE27,2:ATTR5,5:PRINT L1$
:LOCATE13,3:ATTR6,6:PRINT L1$:LO
CATE27,3:ATTR5,5:PRINT L1$
800 LOCATE0,8:ATTR3,3:PRINT"This
 program will display 10 success
ive TATTSLOTO DRAWS and print ou
t the       results if desired."
900 L2$=STRING$(22,CHR$(20)):LOC
ATE19,10:ATTR5,5:PRINT L2$
1000 LOCATE0,13:ATTR3,2:PRINT"If
 experimenting with the programm
e be  sure to revert to normal s
peed for       printer, disk and
cassette operation."
1100 L3$=STRING$(3,CHR$(20)):LOC
ATE37,15:ATTR5,5:PRINT L3$
1200 LOCATE6,18:ATTR6,5,B:PRINT"
 Press any key to continue."
1300 LOCATE7,23:ATTR7,5:PRINT"Pr
ess <BREAK> to exit."
1400 Z$=INKEY$:IF Z$=""THEN1400
1500 CLS4:CH=65:P=0:PR=1
1600 LOCATE1,5:ATTR3,2:PRINT"Do
you want a 10 game printout with
out"
1700 LOCATE39,5:ATTR3,3:PRINT" "
1800 LOCATE15,7:ATTR3,2:PRINT"gr
aphics ?"
1900 LOCATE25,7:ATTR3,3:L4$=STRI
NG$(15,CHR$(20)):PRINTL4$
2000 LOCATE15,15:ATTR6,5:PRINT"(
Y) or (N)"
2100 LOCATE25,15:ATTR3,3:PRINTL4
$
2200 SL$=INKEY$:IF SL$="Y" THEN
4000 ELSE IF SL$="" OR  SL$<>"N"
 THEN 2200
2300 'TATTSLOTO DRAW FRAME
2400 IFCH>74 THEN 300
2500 HSCREEN 2:HCLS4
2600 HCOLOR 6,2:HPRINT(4,2),"TAT
TSLOTTO <CTRL> for next game.":H
COLOR2,1
2700 FORW1=1TO23:HPRINT(0,W1),"W
IN":NEXT
2800 IF P=0 THEN 2900 ELSE FORQ=
3TO35STEP3:HPRINT(Q,23),"WIN":NE
XT:HPRINT(36,23),"W"
2900 FORW2=23TO1STEP-1:HPRINT(37
,W2),"WIN":NEXT
3000 FORW3=39TO0STEP-3:HPRINT(W3
,0),"WIN":NEXT
3100 HCOLOR8,5
3200 'SETUP GRID
3300 Y=32:FORHL =0 TO 6:HLINE(32
,Y)-(288,Y),PSET:Y=Y+24:NEXT
3400 X1=32:FORVL=0TO8:HLINE(X1,3
2)-(X1,176),PSET:X1=X1+32:NEXT
3500 'HIGHLIGHT GAME LETTER
3600 HCOLOR4,3:HPAINT(258,154),3
,8:HPRINT(33,20),CHR$(CH)
3700 HPAINT(258,154),3,8:HPRINT(
33,20),CHR$(CH)
3800 'SELECT RANDOM NUMBERS
3900 HCOLOR3,1
4000 TI=RND(-TIMER):NA=RND(45):N
B=RND(45):NC=RND(45):ND=RND(45):
NE=RND(45):NF=RND(45)
4100 IFNA=NB OR NA=NC OR NA=ND O
R NA=NE OR NA=NF THEN4000
4200 IFNB=NA OR NB=NC OR NB=ND O
R NB=NE OR NB=NF THEN4000
4300 IFNC=NA OR NC=NB OR NC=ND O
R NC=NE OR NC=NF THEN4000
4400 IFND=NA OR ND=NB OR ND=NC O
R ND=NE OR ND=NF THEN4000
4500 IFNE=NA OR NE=NB OR NE=NC O
R NE=ND OR NE=NF THEN4000
4600 IFNF=NA OR NF=NB OR NF=NC O
R NF=ND OR NF=NE THEN4000
4700 IF SL$=CHR$(89) THEN GOTO 6
400
4800 'PRINT GRID NUMBERS
4900 DATA 1,2,3,4,5,6,7,8,9,10,1
1,12,13,14,15,16,17,18,19,20,21,
22,23,24,25,26,27,28,29,30,31,32
,33,34,35,36,37,38,39,40,41,42,4
3,44,45
5000 X1=5:Y=5
5100 FOR X=X1 TO 33 STEP4
5200 READ A
5300 IFA=NA OR A=NB OR A=NC OR A
=ND OR A=NE OR A=NF THEN HPAINT(
8*(X-.5),8*(Y-.5)),9,8:'SOUND150
,2
5400 HPRINT(X-1,Y),A
5500 IFX=21 AND Y=20 THEN 5800
5600 NEXT X
5700 X1=5:Y=Y+3:GOTO5100
5800 RESTORE
5900 'PRINTOUT ROUTINE
6000 IF P=1 THEN 6100 ELSE HCOLO
R6,2:HPRINT(4,33),"Do you want a
 printout  (P) ?"
6100 NX$=INKEY$:IF NX$="" THEN 6
100
6200 IF NX$=CHR$(80) THEN 6400
ELSE IF NX$=CHR$(189) AND P=1 TH
EN 6700 ELSE IF NX$>CHR$(189) T
HEN 6100 ELSE CH=CH+1:GOTO2300
6300 GOTO7100
6400 POKE&HFFD8,0:P=1:IF PR>1 TH
EN GOTO6700
6500 PRINT#-2,CHR$(27);CHR$(14);
"              TATTSLOTO DRAW";CH
R$(27);CHR$(15)
6600 PRINT#-2:PRINT#-2
6700 N1$=STR$(NA):N2$=STR$(NB):N
3$=STR$(NC):N4$=STR$(ND):N5$=STR
$(NE):N6$=STR$(NF)
```

CoCo 3 Program

MINDLESS WANDERINGS

by Ivor Davies

MINDLESS WANDERINGS are a series of programs made for the CoCo 3. They are all very small in length and require no real instructions except (C)LOAD and RUN.

The Listing:

```
1 '*** 3CARCALC ***
2 GOTO10
3 SAVE"184D:3":END
4 'ORIGINAL AUTHOR UNKNOWN
5 'MODIFIED FOR COCO 3
6 '   BY
7 ' IVOR DAVIES
8 'UPPER FERNTREE GULLY
9 ' VIC.     NOV.1986
10 REM ... CAR CALCULATOR ...
15 WIDTH40
20 PALETTE CMP:PALETTE0,0
100 REM ... MENU ...
101 F=5:B=0
102 CLS1:ATTRF,B
110 CLS:PRINT:PRINT
120 LOCATE10,3:PRINT "... CAR CA
LCULATOR ..."
130 LOCATE8,8
140 PRINT "   1. DISTANCE TRAVEL
ED?"
145 LOCATE8,10
150 PRINT "   2. TIME REQUIRED?"
155 LOCATE8,12
160 PRINT "   3. AVERAGE SPEED?"
165 LOCATE8,14
170 PRINT "   4. FUEL ECONOMY?"
175 LOCATE8,16
180 PRINT "   5. END PROGRAM.";
185 LOCATE8,23:ATTRF,B,B
190 PRINT "       SELECT (1-5)";
195 ATTR5,0
200 K$=INKEY$:IF K$="" GOTO 200
210 SEL=ASC(K$)-48
220 CLS1
230 ON SEL GOTO 300,400,500,600,
740
240 GOTO 100
300 REM ... DISTANCE ...
301 F=3:B=2
302 CLS3:ATTRF,B
305 LOCATE5,5
310 INPUT " TIME IN HOURS";T
315 LOCATE5,7
320 INPUT " RATE IN KILOMETRES P
ER HOUR";R
330 D=R*T
335 LOCATE5,10
340 PRINT " AT";R;"KILOMETRES PE
R HOUR"
345 LOCATE5,12
350 PRINT " FOR";T;"HOURS"
355 LOCATE5,14
360 PRINT " YOU WILL TRAVEL"
365 LOCATE5,16
370 PRINT D;"KILOMETRES"
380 GOTO 700
400 REM ... TIME ...
401 F=2:B=7
402 CLS8:ATTRF,B
405 LOCATE5,5
410 INPUT " DISTANCE IN KILOMETR
ES";D
415 LOCATE5,7
420 INPUT " RATE IN KILOMETRES P
ER HOUR";R
430 T=D/R
432 T=INT(T*10+.5)/10
435 LOCATE5,10
440 PRINT " TRAVELING";D;"KILOME
TRES"
445 LOCATE5,12
450 PRINT " AT";R;"KILOMETRES PE
R HOUR"
455 LOCATE5,14
460 PRINT " WILL TAKE YOU"
465 LOCATE5,16
470 PRINT T;"HOURS"
480 GOTO 700
```

```
500 REM ... SPEED ...
501 F=3:B=3
502 CLS4:ATTRF,B
505 LOCATE5,5
510 INPUT " DISTANCE IN KILOMETR
ES";D
515 LOCATE5,7
520 INPUT " TIME IN HOURS";T
530 R=D/T
532 R=INT(R*10+.5)/10
535 LOCATE5,10
540 PRINT " TRAVELING";D;"KILOME
TRES"
545 LOCATE5,12
550 PRINT " IN";T;"HOURS"
555 LOCATE5,14
560 PRINT " YOU WILL AVERAGE"
565 LOCATE5,16
570 PRINT R;"KILOMETRES PER HOUR
"
580 GOTO 700
600 REM ... LITRES/100KM ...
601 F=2:B=5
602 CLS6:ATTRF,B
605 LOCATE5,5
610 INPUT " DISTANCE IN KILOMETE
RS";D
615 LOCATE5,7
620 INPUT " FUEL IN LITRES";L
630 E=INT(L/(D/100))
645 LOCATE5,10
650 PRINT " TRAVELING";D;"KILOME
TRES"
655 LOCATE5,12
660 PRINT " ON";L;"LITRES OF FUE
L"
665 LOCATE5,14
670 PRINT " YOU WILL AVERAGE"
675 LOCATE5,16
680 PRINT E;"LITRES PER 100 KILO
METRES"
700 REM ... MORE? ...
702 ATTRF,B,B
705 LOCATE5,22
710 PRINT "   ANOTHER CALCULATIO
N (Y,N)?";
720 K$=INKEY$:IF K$="" GOTO 720
730 IF K$="Y" GOTO 100
740 CLS1:ATTR7,0
750 END
```

The Listing:

```
1 GOTO10
3 SAVE"184:3":END'10
10 '*** COCO3 HIGH RES DEMO
20 '*** BY I.DAVIES
30 '*** UPPER FERNTREE GULLY
40 '*** 19/10/86
50 ON BRK GOTO 420
60 PALETTE CMP
70 PALETTE0,0
80 PALETTE1,54
90 PALETTE2,09
100 PALETTE3,36
110 HSCREEN4
120 HCLS0
130 HCOLOR3
140 HLINE(5,5)-(635,185),PSET,B
150 HLINE(7,6)-(633,184),PSET,B
160 HCOLOR3
170 FOR Y=20 TO 200 STEP10
180 HLINE(Y,0)-(Y,191),PSET
190 NEXTY
200 HCOLOR2
210 FOR Z=10 TO 190 STEP 10
220 HLINE(0,Z)-(200,Z),PSET
230 NEXTZ
240 HCOLOR3
250 FOR A=0 TO 639 STEP 20
260 HLINE(A,0)-(640-A,191),PSET
270 NEXTA
280 FOR C=5 TO 75 STEP 10
290 HCIRCLE(540,96),C,2
300 HCIRCLE(540,96),C+2,2
310 HCIRCLE(540,96),C+5,3
320 NEXTC
330 HCOLOR1
340 HPRINT(46,11),"Press"
350 HPRINT(49,13),"Break!"
360 SOUND150,3:SOUND150,3:SOUND1
50,3:SOUND100,10
370 FOR P=0 TO 63
380 PALETTE3,P
390 FORDLA=1 TO 100:NEXT
400 NEXTP
410 GOTO370
420 PALETTE CMP:HSCREEN0:CLS:END
```

The Listing:

```
1 GOTO10
3 SAVE"184C:3":END'6
10 '*** COCO3 MEDIUM RES. DEMO
20 '*** BY I.DAVIES
30 '*** UPPER FERNTREE GULLY
40 '*** 19/10/86
50 ON BRK GOTO 420
60 PALETTE CMP
70 PALETTE0,0
80 PALETTE1,54
90 PALETTE2,09
100 PALETTE3,36
110 HSCREEN2
120 HCLS0
130 HCOLOR3
140 HLINE(5,5)-(317,185),PSET,B
150 HLINE(7,6)-(316,184),PSET,B
160 HCOLOR3
170 FOR Y=20 TO 100 STEP5
180 HLINE(Y,0)-(Y,191),PSET
190 NEXTY
200 HCOLOR2
210 FOR Z=10 TO 190 STEP 10
220 HLINE(0,Z)-(100,Z),PSET
230 NEXTZ
240 HCOLOR3
250 FOR A=0 TO 319 STEP 10
260 HLINE(A,0)-(320-A,191),PSET
270 NEXTA
280 FOR C=5 TO 35 STEP 5
290 HCIRCLE(270,96),C,2
300 HCIRCLE(270,96),C+1,2
310 HCIRCLE(270,96),C+3,3
320 NEXTC
330 HCOLOR7
340 HPRINT(23,11),"Press"
350 HPRINT(24,13),"Break!"
360 SOUND150,3:SOUND150,3:SOUND1
50,3:SOUND100,10
370 FOR P=0 TO 63
380 PALETTE3,P
390 FORDLA=1 TO 100:NEXT
400 NEXTP
410 GOTO370
420 PALETTE CMP:HSCREEN0:CLS:END
```

The Listing:

```
1 GOTO10
3 SAVE"184A:3":END'6
4 'MEDIUM RESOLUTION DRAWING OF
AHAT. THEN STEPS THROUGH 64
 COLOURS AVAILABLE
5 'TAKES APPROX. 20 MINS TO DRAW
 HAT ON SCREEN.
10 '***HAT***
11 'ORIGINAL SOURCE UNKNOWN
12 'MODIFIED FOR COCO-3
13 '      BY
14 '  IVOR DAVIES
15 'UPPER FERNTREE GULLY
16 '    VIC
17 '    1986
20 '
30 POKE65497,0
40 ON BRK GOTO 470
50 PALETTE CMP:PALETTE0,0
60 CLS1
70 HSCREEN2
80 HCOLOR0
90 HBUFF1,120
100 HGET(200,160)-(220,170),1
110 P=130:Q=50
120 XP= -100:XR=1.5*3.1415927
130 YP=  28:YR=1:ZP=32
140 XF=XR/XP:YF=YP/YR:ZF=XR/ZP
150 FOR ZI = -Q TO Q-1
160 IF ZI<-ZP ORZI>ZP GOTO240
170 ZT=ZI*XP/ZP:ZZ=ZI
180 XL=INT(.5+SQR(XP*XP-ZT*ZT))
190 FOR XI = -XL TO XL
200 XT=SQR(XI*XI+ZT*ZT)*XF:XX=XI
210 YY=(SIN(XT)+.4*SIN(3*XT))*YF
220 GOSUB 400
230 NEXT XI
240 NEXT ZI
250 POKE65496,0
260 HCOLOR1:HPRINT(25,14),"Press
"
270 HPRINT(27,16),"Break"
280 HPRINT(29,18),"to END"
290 FOR P=0 TO 63
300 PALETTE3,P
310 HCOLOR1
320 HPRINT(10,20),"Color Code ="
:HPRINT(25,20),P
340 SOUNDRND(255),1
350 FOR DLA=1 TO 100:NEXT
360 HPUT(200,160)-(220,170),1,AN
D
370 NEXTP
380 GOTO290
390 GOTO 390
400 X1=XX+ZZ+P
410 Y1=YY+ZZ+Q
420 HCOLOR3
430 HSET(X1,Y1)
440 IF Y1=0   GOTO 460
450 HLINE(X1,Y1+1)-(X1,191),PRES
ET
460 RETURN
470 POKE65496,0:HSCREEN0:PALETTE
 CMP:CLS:END
```

The Listing:

```
1 '*** TEST PATTERN FOR COCO3
2 GOTO10
3 SAVE"184B:3":END'6
4 '   BY
5 ' IVOR DAVIES
6 'UPPER FERNTREE GULLY
7 '    VIC
8 ' NOV. 1986
10 ON BRK GOTO 480
20 PALETTE0,0:PALETTE1,16:PALETT
E2,32:PALETTE3,48:PALETTE4,09:PA
LETTE5,17:PALETTE6,33:PALETTE7,4
9:PALETTE8,02:PALETTE9,47:PALETT
E10,34:PALETTE11,63:PALETTE12,40
30 CLS1
40 HSCREEN2
50 HCOLOR1
60 HLINE(0,0)-(320,192),PSET,B
70 HCOLOR2
80 FOR X=10 TO 160 STEP 10
90 HLINE(X,0)-(160,96),PSET
100 NEXT
110 HCOLOR3
120 FOR X=10 TO 160 STEP10
130 HLINE(320-X,0)-(160,96),PSET
140 NEXTX
150 HCOLOR4
160 FOR X=10 TO 160 STEP10
170 HLINE(320-X,192)-(160,96),PS
ET
180 NEXT
190 HCOLOR5
200 FOR X=10 TO 160 STEP10
210 HLINE(X,192)-(160,96),PSET
220 NEXT
230 HCOLOR6
240 FOR X=1 TO 20 STEP2
250 HCIRCLE(120,96),X
260 NEXTX
270 HCOLOR7
280 FOR X=1 TO 20 STEP2
290 HCIRCLE(200,96),X
300 NEXTX
310 HCOLOR8
320 FOR Y=10 TO 180 STEP10
330 HLINE(0,Y)-(100,96),PSET
340 NEXTY
350 HCOLOR9
360 FOR Y=10 TO 180 STEP10
370 HLINE(220,96)-(320,Y),PSET
380 NEXTY
390 HCOLOR0
400 HLINE(100,10)-(220,30),PSET,
BF
410 HCOLOR11
420 HPRINT(14,2),"Test Pattern"
430 HCOLOR12
440 HLINE(100,10)-(219,30),PSET,
B
450 HLINE(101,11)-(218,29),PSET,
B
460 HLINE(102,12)-(217,28),PSET,
B
470 GOTO470
480 HSCREEN0:CLS:PALETTE RGB:END
```

GRAPHICS 16K ECB

by Steven Lees–Smith

SKULL IS A GRAPHICS program showing a grid at the bottom half of the screen with a demon-like skull in the top half. Occasionally a lightning bolt will strike the earth and occasionally the skull's eyes will light up.
Like a christmas tree!

The Listing:

```
0 GOTO2
1 SAVE"233:3":END'6
2 '*************************
3 '*********SKULL***********
4 '**********BY*************
5 '*****STEVEN LEES-SMITH***
6 '******BALMAIN N.S.W******
7 '*********MAR'87**********
8 '*************************
10 PMODE4:SCREEN1,1:PCLS
20 DRAW"BM55,30M69,35M75,20M85,1
5M115,25M130,27M145,25M170,13M18
8,22M193,39M205,30M190,50M185,35
M175,27M158,40BM55,30M72,50M78,3
5M85,30M103,40"
30 DRAW"BM115,25M109,28M101,45M1
03,55M115,70BM145,25M155,30M158,
40M162,45M160,55M155,65M145,70"
40 DRAW"BM105,45M107,37M110,35F2
M115,37R5M125,41M124,44M125,48M1
20,50M105,45BM145,50L5M135,43M13
7,38M145,37M148,35M151,37M155,45
M145,50"
50 DRAW"BM142,70U3F3M147,77G4M14
4,78M142,75NL2U5L2G1D3NF1D1L3U4E
1M139,71BL3M135,75L1H1G1L1M132,7
1E2F2"
60 DRAW"BM130,75L2H1G1M125,71E2F
2M130,75BL6M125,71H2G1M121,75R3B
L5E2U2H1L2U3G3M113,77F4M116,78M1
18,75NR2U5"
70 DRAW"BM130,75U7H8U4E3U1M128,5
1F2D12M125,61M122,60BM131,75U7E8
U3H3U2M134,49M131,53D12M136,61M1
39,60"
80 PAINT(85,16),1:PAINT(170,14),
1
100 'GROUND
110 LINE(0,100)-(255,100),PSET:D
RAW"BM0,170R255BU20L255BU15R255B
U10L255BU10R255BU5L255BU5R255"
120 LINE(0,125)-(128,100),PSET:L
INE-(0,150),PSET:LINE(0,255)-(12
8,100),PSET:LINE-(85,191),PSET:L
INE(170,191)-(128,100),PSET:LINE
-(255,191),PSET:LINE(255,150)-(1
28,100),PSET:LINE-(255,125),PSET
149 FORT=1TO500:NEXTT:COLOR1
150 LINE(245,0)-(230,25),PSET:FO
RT=1TO30:NEXTT:LINE-(235,50),PSE
T:FORT=1TO30:NEXTT:LINE-(250,60)
,PSET:LINE(235,50)-(225,65),PSET
:FORT=1TO30:NEXTT:LINE-(235,85),
PSET:FORT=1TO30:NEXTT:LINE-(225,
99),PSET
155 FORT=1TO300:NEXTT
160 LINE(245,0)-(230,25),PRESET:
LINE-(235,50),PRESET:LINE-(250,6
0),PRESET:LINE(235,50)-(225,65),
PRESET:LINE-(235,85),PRESET:LINE
-(225,99),PRESET
163 FORT=1TO300:NEXTT
164 LINE(20,0)-(35,20),PSET:FORT
=1TO30:NEXTT:LINE-(25,40),PSET:F
ORT=1TO30:NEXTT:LINE-(10,50),PSE
T:FORT=1TO30:NEXTT:LINE-(5,60),P
SET:FORT=1TO30:NEXTT:LINE(25,40)
-(35,65),PSET:FORT=1TO30:NEXTT:L
INE-(25,80),PSET:FORT=1TO30:NEXT
T:LINE-(40,99),PSET
165 FORT=1TO300:NEXTT
166 LINE(20,0)-(35,20),PRESET:LI
NE-(25,40),PRESET:LINE-(10,50),P
RESET:LINE-(5,60),PRESET:LINE(25
,40)-(35,65),PRESET:LINE-(25,80)
,PRESET:LINE-(40,99),PRESET:FORT
=1TO300:NEXTT
170 COLOR1:FORE=1TO4:CIRCLE(115,
43),E:CIRCLE(145,43),E:NEXTE:COL
OR2:FORE=1TO4:CIRCLE(115,43),E:C
IRCLE(145,43),E:NEXTE
200 GOTO149
```

DR. MICRO

by Tom Lehane

16K ECB

Educational

THE NATIONAL health and medical research council of Australia published a simple chart to indicate if you are over or under weight. They found many people think they are overweight when in fact they are in a healthy weight range.

The formula used is, take your weight and divide by your height squared.

Compare the answer to the Body Mass Index chart, if the answer is between 20 and 25 you have a healthy weight range.

Programming the computer to calculate your Body Mass Index using this formula was not difficult. The computer performs the task to calculate your B.M.I. by asking for your height and weight then giving you the answer to what may be far from the image you have of yourself.

The most difficult part of the program was what advice to give.

I researched many diets but found them either to complexed or fad diets.

The best plan is to consult your doctor if the 'DR MICRO' program indicates you have a weight problem. The program does give advice like all good doctors.

The suggestions given are those used by dietitians. The program would be useful at fund raising activities such as a school fate.

Using a set of bath room scales and a quick means of measuring a persons height, the Colour Computer will handle the rest.

The Listing:

```
0 GOTO10
1 '********** DR MICRO **********
   ***** TOM LEHANE ************
3 SAVE"193:3":END'2
10 CLS
20 PRINTTAB(9)CHR$(133)" DR MICR
O "CHR$(138)
30 PRINTTAB(9)STRING$(12,131)
40 PRINT"ARE YOU OVER WEIGHT? SO
ME PEOPLE";
50 PRINT"THINK THEY ARE WHEN IN
FACT THEY";
60 PRINT"HAVE A HEALTHY BODY WEI
GHT."
70 PRINT"DR MICRO WILL CHECK YOU
 OUT BY"
80 PRINT"USING A WEIGHT CHART AD
OPTED BY"
90 PRINT"THE NATIONAL HEALTH AND
 MEDICAL"
100 PRINT"RESEARCH COUNCIL FOR P
EOPLE"
110 PRINT"OVER 18 YEARS OLD."
120 PRINT"THE METHOD IS KNOWN AS
 B.M.I."
130 PRINT"(BODY MASS INDEX)."
140 PRINT TAB(3)STRING$(26,131)
150 PRINT"PROGRAMMED BY TOM LEHA
NE (1987)"
160 PRINT TAB(3)STRING$(26,131)
170 GOSUB200
180 GOTO 230
190 REM bmi--(BODY MASS INDEX)
200 PRINT"press"CHR$(128)"enter"
CHR$(128)"to"CHR$(128)"continue"
;
210 INPUTZZ$
220 RETURN
230 CLS
240 PRINT
250 PRINTSTRING$(160,204)
260 PRINT@73,"*DOCTOR MICRO*";
270 PRINT@105,STRING$(14,143);
280 PRINT@110,"FOR";
290 PRINT@137,"*YOUR--HEALTH*";
300 '
310 PRINT@224,"WHAT MEASURE DO Y
OU WANT TO USE"
320 PRINT
330 PRINT TAB(10)"<1> METRIC"
340 PRINT TAB(10)"<2> INCHES"
350 PRINT:PRINTTAB(8)"ENTER YOUR
 CHOICE"
360 I$=INKEY$:IF I$=""THEN360
370 IF I$="1" THEN 400
380 IF I$="2" THEN 1000
390 GOTO 230
400 CLS:PRINT TAB(12)"metric"
410 PRINTSTRING$(32,204)
420 GOSUB 1210
430 PRINT TAB(20)"CENTIMETRES"
440 PRINT TAB(4):INPUT"WHAT HEIG
HT ARE YOU";A
450 PRINT TAB(4)STRING$(18,131)
460 GOSUB 1160
470 PRINT:PRINT TAB(4):INPUT"WHA
T IS YOUR WEIGHT";D
480 PRINT TAB(4)STRING$(19,131)
490 GOSUB 1190
500 CLS:PRINT TAB(6)"ONE MOMENT
PLEASE"
510 PRINTTAB(6)STRING$(17,131)
520 PRINT@100,"THE DOCTOR IS MAK
```

```
ING":PRINT TAB(5)" HIS CALCULATI
ONS"
530 FOR X=1 TO 40
540 PRINT@196,CHR$(RND(128)+127)
+CHR$(RND(128)+127)+CHR$(RND(128
)+127);
550 PRINT@228,CHR$(RND(128)+127)
+CHR$(RND(128)+127)+CHR$(RND(128
)+127);
560 NEXT X
570 PRINT@192,STRING$(32,131)
580 PRINT"YOUR BODY MASS INDEX I
S.."E
590 IF E<20 THEN 680
600 IF E>25 THEN 740
610 GOSUB 1260
620 PRINT TAB(12)"HEALTHY"
630 PRINT TAB(12)STRING$(7,252)
640 PRINTSTRING$(32,131)
650 PRINTTAB(10)"FOR A REPORT"
660 GOSUB 200
670 GOTO900
680 IF E<18 THEN 870
690 GOSUB 1260
700 PRINT TAB(9)"UNDERWEIGHT"
710 PRINT TAB(9)STRING$(11,252)
720 PRINT"YOU NEED TO EAT MORE N
UTRITIOUS FOOD"
730 GOSUB 200:CLS:GOTO940
740 IF E>30 THEN 810
750 GOSUB 1260
760 PRINT TAB(9)"OVER WEIGHT"
770 PRINT TAB(9)STRING$(11,252)
780 PRINT:PRINT"FOR YOUR DIET PL
AN"
790 GOSUB 200
800 GOTO 1280' diet plan
810 PRINT"I'AM SORRY TO SAY YOU
ARE"
820 PRINT TAB(7)"GROSSLY OVER WE
IGHT"
830 PRINT TAB(7)STRING$(19,252)
840 PRINTSTRING$(32,131)
850 GOSUB 200:GOTO 1980
860 '
870 PRINT"YOU ARE EXTREMELY UNDE
R WEIGHT"
880 GOTO 710
890 GOTO 940
900 CLS
910 PRINT TAB(6)"DR MICRO'S REPO
RT"
920 PRINT TAB(6)STRING$(17,131)
930 PRINT"YOU HAVE A HEALTHY BOD
Y WEIGHT"
940 PRINT:PRINT"TRY TO KEEP IN T
HE
950 PRINT"RANGE OF 20 TO 25"
960 PRINT"OF THE B.M. INDEX CHAR
T"
970 PRINT"YOUR PRESENT BODY INDE
X IS.."E
980 PRINTSTRING$(32,131)
990 GOSUB 200:GOTO230
1000 CLS
1010 PRINT TAB(8)"ENGLISH MEASUR
E"
1020 PRINT TAB(8)STRING$(15,147)
1030 GOSUB 1210
1040 PRINT"TWO INPUTS REQUIRED"
1050 INPUT"WHAT IS YOUR HEIGHT (
FEET)";F
1060 INPUT" AND HOW MANY INCHES"
;H
1070 G=F*12
1080 K=G+H
1090 A=K*2.54:GOSUB 1160
1100 PRINTSTRING$(32,131)
1110 PRINT"USE ONLY WHOLE LBS."
1120 INPUT"YOUR WEIGHT IN POUNDS
";J
1130 D=INT(J*.4536)
1140 GOSUB 1190
1150 GOTO 500
1160 B=A/100
1170 C=B*B
1180 RETURN
1190 E=INT(D/C)
1200 RETURN
1210 PRINT"I WILL NEED SOME INFO
RMATION"
1220 PRINT"FOR ME TO MAKE THE RE
QUIRED"
1230 PRINT"BODY MASS CALCULATION
S"
1240 PRINTSTRING$(32,131);
1250 RETURN
1260 PRINT"THE DOCTOR FINDS YOU
ARE...."
1270 RETURN
1280 CLS
1290 Q=Q+1
1300 READ W$
1310 IF W$="***" THEN GOSUB 200:
CLS:GOTO1290
1320 IF W$="END" THEN GOSUB 200:
Q=0:RESTORE:GOTO 230
1330 FOR X=1 TO LEN(W$)
1340 D$=MID$(W$,X,1)
1350 IF D$="-" THEN PRINTCHR$(32
);:GOTO 1360
1360 PRINTD$;
1370 IF D$="." THEN PRINT
1380 NEXT X
1390 GOTO 1290
1400 REM START
1410 DATA MANY COMMON CAUSES OF
WEIGHT----
1420 DATA PROBLEMS IS A HIGH FAT
 DIET.
1430 DATA TOO MUCH FAT IN OUR DI
ET ALSO---
1440 DATA RELATES TO HEART DISEA
SE.
1450 DATA === MAJOR SOURCES OF F
AT ARE ===
1460 DATA MEATS CONTRIBUTE 37% O
F THE.FAT-
1470 DATA IN THE DIET.
1480 DATA MARGARINES*OILS AND CO
OKING FATS
1490 DATA MAKE UP 33% OF FAT WE
EAT.
1500 DATA ***
1510 DATA MILK*CHEESE*ICE CREAM
AND YOGURT
1520 DATA TOGETHER PROVIED 14% O
F FAT.
1530 DATA BUTTER CONTRIBUTES 6%.
1540 DATA CHICKEN*NUTS*GRAINS*BR
EADS*FISH-
1550 DATA VEGETABLES AND FRUITS
CONTRIBUTE
1560 DATA THE REMAINING 10%.
1570 DATA ***
1580 DATA CUTTING DOWN ON FATS W
ILL HELP--
1590 DATA YOU IN WEIGHT CONTROL.
1600 DATA THE FOLLOWING IS A SUG
GESTION ON
1610 DATA CUTTING DOWN ON FATS.
1620 DATA ***
1630 DATA CHOOSE MORE SEAFOODS.
1640 DATA AVERAGE FILLET OF FISH
 HAS 1 TO-
1650 DATA 5 GRAMS OF FAT.
1660 DATA * USE LOW FAT MEATS SU
CH AS VEAL
1670 DATA CHICKEN* TURKEY FILLET
S.
1680 DATA IF USING MEATS LOOK FO
R LEAN----
1690 DATA CUTS AND KEEP TO SMALL
 PORTIONS.
1700 DATA * EAT MORE VEGETABLES
AS THEY---
1710 DATA HAVE PRACTICALLY NO FA
T.
1720 DATA * SERVE FRESH FRUITS F
OR DESSERT
1730 DATA ** DON'T USE TIN FRUIT
S AS THEY-
1740 DATA CONTAIN ADDED SUGARS.
1750 DATA ***
1760 DATA THE TEN COMMANDMENTS.
1770 DATA ==========.
1780 DATA EAT THREE MEALS A DAY.
1790 DATA START EVERY DAY WITH A
 PROTEIN -BREAKFAST
1800 DATA -INCLUDE 90 GRAMMES OF
 PROTEIN IN
1810 DATA -YOUR DIET EACH DAY.
1820 DATA INCLUDE 30 GRAMMES OF
FIBRE EACH
1830 DATA DAY.
1840 DATA DO NOT EAT CONCENTRATE
D SUGARS
1850 DATA --SUCH AS TREACLE WHIT
E OR BROWN
1860 DATA --SUGAR MOLASSES OR JA
M.
1870 DATA .,***
1880 DATA DO NOT EAT BREAKFAST C
EREALS.
1890 DATA ANY BREAD PASTA - OR R
ICE SHOULD
1900 DATA BE WHOLE GRAIN.
1910 DATA DO NOT DRINK ANY ALCOH
OL.
1920 DATA CUT OUT CAFFEINE (SUCH
 AS COFFEE
1930 DATA COCOA-*TEA-*COLA).
1940 DATA DON'T BE OBSESSIVE ABO
UT YOUR
1950 DATA ---FOOD AND ENJOY FOLL
OWING THE
1960 DATA ----EATING PLAN.
1970 DATA END
1980 CLS:PRINTTAB(9)"DR'S REPORT
"
1990 PRINTTAB(6)STRING$(17,131)
2000 PRINT@96,"WITH THE CALCULAT
IONS I HAVE":PRINT"MADE,YOUR BOD
Y MASS INDEX IS"E;
2010 PRINT"THIS IS WELL ABOVE TH
E RANGE":PRINT"OF 20 TO 25 FOR A
 HEALTHY BODY"
2020 PRINT"WEIGHT.":PRINT"I SUGG
EST YOU SEEK OTHER MEDICAL ADVIC
E."
2030 PRINTSTRINGS$(32,140)
2040 PRINT"FOR SOME DIET SUGGEST
IONS JUST-"
2050 GOSUB 200:GOTO 1280
```

FIREWORKS

by Chris Deacon

MC–10

A MODIFIED VERSION of the program by Bob and Tino Delbourgo. FIREWORKS will give 15 pages which will reside below Gary Furr's Extended Basic V1.0. Chris has also modified Grahame Pollock's page flipping program to flip 15 pages. Once the pages are loaded, use <A - S> keys to control the display speed. Every time you RUN the program you will get a different firework display.

The Listing FIREWORK:

```
0 REM FIREWORKS BY TINO & BOB
        DELBOURGO
    MODIFIED BY CHRISS DEACON
  ------------------------------
10 CLS:X=26170:CLEAR100,X:X=2617
0:POKE16917,126
20 POKE16918,INT(X/256):POKE1691
9,X-INT(X/256)*256
30 FORZ=X TO X+35:READA:POKEZ,A:NE
XTZ
40 DATA206,64,0,60,206,103,58,16
6,0,8,140,133,58,38,7
50 DATA206,103,58,255,102,63,57,
255,102,63
60 DATA56,167,0,8,60,140,65,0,38
,225,57
70 CLS0:PRINT"PLEASE WAIT FOR FU
SES TO BE LIT ....."
80 DIMX(3,11),Y(3,11)
90 FORK=1TO3:CX(K)=RND(8):CC(K)=
RND(8):CR(K)=RND(8):CD(K)=RND(8)
:R(K)=RND(3)+7:X(K,1)=21*(K-1)+R
ND(21):Y(K,1)=31
100 X(K,2)=12+RND(39):Y(K,2)=11+
RND(3)
110 FORL=3TO11:T=RND(628)/10:X(K
,L)=INT(X(K,2)+1.2*R(K)*COS(T)):
Y(K,L)=INT(Y(K,2)+R(K)*SIN(T)):N
EXTL,K
120 CLS0:FORK=1TO3:X=X(K,1):Y=Y(
K,1):XX=(X+X(K,2))/2:YY=(Y+Y(K,2
))/2:C=CC(K):GOSUB340:NEXTK:S=1:
GOSUB500
130 CLS0:FORK=1TO3:X=(X(K,1)+X(K
,2))/2:Y=(Y(K,1)+Y(K,2))/2:XX=(X
(K,1)+3*X(K,2))/4:YY=(Y(K,1)+3*Y
(K,2))/4:C=CC(K):GOSUB340:NEXTK
140 S=2:GOSUB500
150 CLS0:FORK=1TO3:X=(X(K,1)+3*X
(K,2))/4:Y=(Y(K,1)+3*Y(K,2))/4:X
X=(X(K,1)+8*X(K,2))/9:YY=(Y(K,1)
+8*Y(K,2))/9:C=CC(K):GOSUB340
160 NEXTK:S=3:GOSUB500
170 CLS0:FORK=1TO3:X=X(K,2):Y=Y(
K,2):C=CR(K):GOSUB430:NEXTK:S=4:
GOSUB500
180 FORK=1TO3:FORL=3TO11:X=X(K,2
):Y=Y(K,2):XX=(X+X(K,L))/2:YY=(Y
+Y(K,L))/2:C=CR(K):GOSUB340:NEXT
L,K:S=5:GOSUB500
190 CLS0:FORK=1TO3:FORL=3TO11:X=
(3*X(K,2)+X(K,L))/4:Y=(3*Y(K,2)+
Y(K,L))/4:XX=(X(K,2)+3*X(K,L))/4
:YY=(Y(K,2)+3*Y(K,L))/4:C=CR(K)
200 GOSUB340:NEXTL,K:S=6:GOSUB50
0
210 CLS0:FORK=1TO3:FORL=3TO11:XX
=X(K,L):YY=Y(K,L):X=(XX+X(K,2))/
2:Y=(YY+Y(K,2))/2:C=CR(K):GOSUB3
40:NEXTL,K:S=7:GOSUB500
220 CLS0:FORK=1TO3:FORL=3TO11:X=
X(K,L):Y=Y(K,L):XX=(3*X+X(K,2))/
4:YY=(3*Y+Y(K,2))/4:C=CR(K):GOSU
B340:GOSUB430:NEXTL,K:S=8
230 GOSUB500
240 CLS0:FORK=1TO3:FORL=3TO11:X=
X(K,L):Y=Y(K,L):C=CD(K):GOSUB420
:NEXTL,K:S=9:GOSUB500
250 CLS0:FORK=1TO3:FORL=3TO11:X=
X(K,L):Y=Y(K,L):XX=X:YY=Y+2:C=CD
(K):GOSUB390:NEXTL,K:S=10:GOSUB5
00
260 CLS0:FORK=1TO3:FORL=3TO11:X=
X(K,L):Y=Y(K,L)+1:XX=X:YY=Y+2:C=
CD(K):GOSUB390:NEXTL,K:S=11:GOSU
B500
270 CLS0:FORK=1TO3:FORL=3TO11:X=
X(K,L):Y=Y(K,L)+4:XX=X:YY=Y+2:C=
CD(K):GOSUB390:NEXTL,K:S=12:GOSU
B500
280 CLS0:FORK=1TO3:FORL=3TO11:X=
X(K,L):Y=Y(K,L)+5:XX=X:YY=Y+1:C=
CD(K):GOSUB390:NEXTL,K:S=13:GOSU
B500
290 CLS0:FORK=1TO3:FORL=3TO11:X=
X(K,L):Y=Y(K,L)+5:C=CX(K):GOSUB4
30:NEXTL,K:S=14:GOSUB500
300 CLS0:FORK=1TO3:FORL=3TO11:X=
X(K,L):Y=Y(K,L)+5:C=CX(K):GOSUB4
20:NEXTL,K:S=15:GOSUB500
310 GOTO 600
340 IFX>XX THEN370
345 IF X=XX THEN 390
350 FORI=XTOXX:J=(YY-Y)*(I-X)/(X
X-X):SET(I,J+Y,C):NEXTI
360 RETURN
370 FORI=XXTOX:J=(Y-YY)*(I-XX)/(
X-XX):SET(I,J+YY,C):NEXTI
380 RETURN
390 IF Y>YY THEN410
400 FORI=YTOYY:SET(X,I,C):NEXTI:
RETURN
410 FORI=YYTOY:SET(X,I,C):NEXTI:
RETURN
420 SET(X-1,Y-1,C):SET(X+1,Y+1,C
):SET(X-1,Y+1,C):SET(X+1,Y-1,C)
430 SET(X-1,Y,C):SET(X+1,Y,C):SE
T(X,Y-1,C):SET(X,Y+1,C):RETURN
500 FORH=0TO511:POKE25914+H+S*51
2,PEEK(16384+H):NEXT:RETURN
600 DL=30
610 A$=INKEY$:P=USR(0)
620 DL=DL+10*((A$="A"ANDDL>10)-(
A$="S"))
630 FORI=1TODL:NEXTI:GOTO610
```

CoCo 3 Program

KIDSTUFF

by Johanna Vagg

MY KIDS HELPED me to program KIDSTUFF in the early months of 1984. We were very pleased when Greg told us that he thought it was wonderful and that he would include it in CoCoOz. Later in the year, Graham too said that he liked it, and that it was his daughter's favourite.

When we heard recently that it was to be included in the CoCo 3 tape, we were pleased all over again.. until we saw it!

It will be clear to anyone who has seen the original, that the person(s) who converted it did not have the same feeling for the program which we had. I am a little(!) concerned that some of the people who have bought the CoCo 3 tape, have not seen the original ... and our names are on a program which is certainly no improvement on the original!

The colours for Humpty are wrong; he does not fall off the wall; the twinkling stars twinkle down in their boots (but then, maybe that's what yellow plus signs do on a green background!); the mice are purple (yuk) blobs whose tails are disconnected even before the farmer's wife gets to them; and there's a ?DD ERROR when the whole thing tries to re-RUN.

As the CoCo 3 is such a good computer we should make use of the new capabilities if we are to convert programs for it.

KIDSTUFF could probably be improved, but all I've done is to restore it. In 1984, Monica, then aged 8, suggested using the high speed poke to help the stars to twinkle. We lowered the music (twinkle twinkle only) an octave to compensate.

As this high speed poke does not work on the CoCo 3, the music is too low.

However, we have a new high speed poke which could be used throughout the program. The other music could then be lowered an octave, depending on your taste. This high speed poke will hasten the drawing along, and the mice too!

Delete 740 and the POKE part of 910

Then add:

```
25 ON BRK GOTO 2000
27 POKE65497,0
2000 POKE65496,0:PALETTERGB
 :END
```

The THREE is also able to make things 'appear to disappear' more easily than the ONE and TWO. So why doesn't Humpty fall off the wall? We don't need to redraw him in the background colour, so we can delete lines 590 to 630.

To make the colours more acceptable, I've changed line ...

```
330 HCLS4
```

... and taken out line 340.

Line 380 should have ...

```
C2S8
```

... inserted into it, and lines 390 and 400 should have the endings changed to ...

```
,4,2.
```

Then insert:

```
405 HCOLOR3
```

... and change 480 to HCOLOR4.

The color in 560 should be 4 and in 570, 2.

To make Humpty disappear, insert:

```
595 PALETTE2,63
```

I suggest surrounding the fall (line 640) with:

```
605 POKE65496,0
645 POKE65497,0
```

To get the black sky for the stars, you could HCLS8. Then you would still get plus signs.. so try this:

```
680 PALETTE0,0
```

Use HSCREEN2 for the 'writing', but for the stars, change to HSCREEN4, ie:

```
920 HSCREEN4:HCLS0
```

You can have more stars (line 930), and to spread them a little, increase the value in 940. The radius should be increased to 3 (line 960).

Now for the mice. Change 1000 thus:

```
1000 HSCREEN2:HCLS1:HCOLOR7
 :PALETTE7,49
1025 HCIRCLE(56,150),10,7,.7
1030 HPAINT(56,150),7,7
1050 HLINE(56,150)-(32,150)
 ,PSET
1055 HLINE(56,151)-(32,151)
 ,PSET
1235 HCIRCLE(51,120),10,7,.7
1240 HPAINT(51,120),7,7
DEL 1070
```

DELETE the colour from line 1065 (C8)

Change 1100, 1130, 1160, 1190 and 1230 to HCLS1.

The mice can run further if you change lines 1120, 1150 and 1180.

The values in the HPUT in 1270 and 1275 can be adjusted for the extra 64 Pixels we have across the screen.

To prevent the ?DD ERROR, change line 1325..

```
1325 FORT=1TO2000:NEXT
 :PALETTERGB:GOTO330
```

This way you won't have to view the title screen again... by the way, it can be easily centered by editing lines 311 to 318.

Before I leave, SKANGA will get his tail if you change the DRAW in line 45 to HDRAW. Then you'll have to HPAINT it. I dislike the background color.

I'm sure you can do better. I prefer to make the screen the colour I want for the kangaroo.

Then I HPAINT the background.

SPECIFICS

by Johanna Vagg

IN THIS ARTICLE I would like to answer some of the specific questions which were asked of me at COCOCONF. One of these was "What problems did you have when you started?"

"Problems? I've had a few.." says Frank Sinatra.. and then he adds something about doing it his way.. My main problem initially was not having a TV other than the one which my family always seemed to be watching. This problem lasted 17 months.

When I was eventually presented with their old TV (they watch the new one), I had a two month old baby, so the problem then was one of time. 'Doing it my way' was a problem of sorts. I was on my own. There was no-one to help me. On the odd occasion when my programmer brother visited from Sydney, I was told that 'my way' wasn't the right way. I think the 'right way' involved knowing about BINARY and HEXIDECIMAL numbers.

I felt that what I was doing was right for ME. I was having fun. If I wasn't enjoying it, my CoCo would have been banished to the wardrobe. 'My way' was playing with PRINT, SOUND, PLAY and DRAW.

The next question is closely related: "How do you find the time?" The short answer is: "With difficulty." Katy is 22 months old now and into everything.

It is virtually impossible to 'work with' the computer while she is awake. The other four also object. Unless they're asleep, they misbehave when I sit down with the computer.

I find time by cutting down on non-essentials like sleeping, eating, washing etc. Seriously, if you are the type who can't sleep unless the tea towels are ironed, forget computing! You don't have the time. It's all a matter of priorities.

I use CoCo as a form of escapism. I fill my mind with 'computer thoughts' to partially block out worries. By worries I mean the things which no amount of worrying will change. It would not be right to hide from reality.

Another question involved the use(?) of flow charts. I wonder if you've noticed that I don't end sentences with prepositions? What does that have to do with flow charts??

It's difficult to write good English. It's more difficult to speak that way. I often end sentences with prepositions when I'm speaking (and I would say 'talking', not 'speaking'). When I want to be emphatic, I will even revert to good old Aussie slang..

"Flow charts? I never writ one of them things in me life!" That was my answer to that one!

The problem of language brings me to the next problem of computing. How did I learn BASIC, and how could I understand the manual? Again, the short answer is, with difficulty. Do you know that the bus driver was not amused when I answered 'By bus' to his question, "How are we going?"?!

The manual is not always clear.

It is sometimes wrong. (Octaves begin with the note C, not A.) Have you ever tried to write instructions? It is not easy to clearly explain anything. My washing machine is temperamental. I had to leave instructions before I went to COCOCONF.

'Composing' these was a big job. I will try, in a series of articles, to teach beginners some basic BASIC.

Graham already has some of my articles which I wrote last year, but which were misplaced. One of these deals with another question I was asked. It tells of the method I have adopted to enter machine code and then 'look at' that code.

There are programs which will help you to do these things. One which I like is DEBUG from MARCH 1986 RAINBOW.

Here are some of the miscellaneous items we touched on. One was the Clayton's Cold Start. I have found that typing POKE113,0 and pressing RESET (or adding EXEC40999) is not really the same as turning the computer off and on again.

I realised this early in 1984 because doing this and a POKE25,6:NEW did not clear the memory for the COCOCOMPOSER. When this program is CLOADed without turning the computer off first, there is 'rubbish' in the music section. It's rubbish to some, but fun to the kids!

More recently I discovered that if you have a picture on the HI-RES screen and you do a Clayton's Cold Start, you can still look at your picture (or dump it to the printer). If your picture started on the first 'page' of the PMODE4 screen, then type:

```
10 PMODE4:SCREEN1,1:GOTO10
```

What do you think of the cold start now? If you have a file from the COCOCOMPOSER and EXEC it, then do a cold start and type EXEC, it will come up ?FC ERROR. However, try EXEC11264 and voila!

Talking of EXEC... EXEC44539 is a handy one. It's like INKEY$. You can use it when you want a program to 'just sit there' until you press a key.

Then there are the Speed POKEs. The Hi-Speed POKE:

POKE65495,0 with POKE65494,0 to return to normal

The extra Speed POKE:

POKE65497,0 with POKE65496,0 to return.

There are a number of POKEs to 359. You can see some of these in my POKE collection in SEPTEMBER 1985 COCO. Try POKE359,128.

A point I would like to make is that although I do remember (after 3 years!) certain things about BASIC, I have a list on the wall near the computer. This is a list of various things which I usually forgot. I think that tonight I forgot something.. I forgot to go to bed. It is 1.45 am!

IF I WERE A RICH MAN

16K ECB
MUSIC

by Mal McLaughlan

IF I WERE A RICHMAN is a musical piece I created to give people some ideas that I applied in my music tutorial.
Enjoy it!

The Listing:

```
1 '**********RICHMAN***********
**SET TO COCO BY MAL MCLAUCHLAN*
**********JAN. 1987**********
2 GOTO 10
3 SAVE"168C:3":END'7
4 'MUSIC FOR ALL ECB COCO'S,FROM
 MUSICAL "IF I WERE A RICH MAN".
5 '***ARRANGED BY MAL MCLAUCHLAN
11HUNTER ST.,BOONAH. Q.4310*****
10 CLS
20 FOR S=0 TO 510 STEP2
30 PRINT@S,CHR$(36);CHR$(255);
40 NEXT S
50 PRINT@482,CHR$(36);CHR$(255);
CHR$(36);CHR$(255);"if i were a
rich man";CHR$(36);CHR$(255);CHR
$(36);CHR$(255);
60 PLAY"T4O3L8GFGFL4ECO2V>CO3V<L
8EFGFGFEFGAB-AB-AL4GL8GGL4GL8GG"
70 PLAY"T4O3L4A-L8GGL4G-L8FFE-DC
DL4E-L8E-E-"
80 PLAY"T4O3L8E-DCDL4E-L8CCL4GP4
O4V>GV<P4"
90 PLAY"T4T4O3L8GFGFL4ECO2V>CO3V
<L8EFGFGFEFGAB-AB-AL4GL8GGL4GL8G
G"
100 PLAY"T4O3L4A-L8GGL4G-L8FFE-D
CDL4E-L8E-E-"
110 PLAY"T4O3L8E-DCE-DCO2BO3DL2C
P32L4EFGA-A-A-A-A-L8B-O4CO3B-A-"
120 PLAY"T4O3L4GL8GGGGGGL2.GL4GF
FFFFL8GA-L4.GL8FL4EL8CGEDGEO4L4C
"
130 PLAY"T4O3L4EFGA-A-A-A-L4A-L8
B-O4CO3L4B-A-GL8GGGGGGL2.G"
140 PLAY"T4O3L4GFFFFE-DCE-GL8BA#
BL4O4CL8C#L4D"
150 PLAY"T4O4L4EFGAAAAAL8BO5CD4L
4BAGL8GGGGGGL2GP4"
160 PLAY"T4O4L4FFFFFL8GAL4GFL1EL
8EEEEEEL4EO3EFGA-A-A-A-A-L8B-O4C
O3L4B-A-GL8GGGGGGL2.G"
170 PLAY"T4O3L4GFFFE-DCE-GL8BA#B
O4L4CL8C#O4L4DP4O3L4EFGAAAAAL8BO
4CO3L4BL8BAL4GL8GGGGGGL4GGG"
180 PLAY"T4O3L4GFFFFFL8FAL4GFEL8
CD-A-GED-L4CEFGA-A-A-A-A-L8B-O4C
O3L4B-A-GL8GGGGGGL4GGGG"
190 PLAY"T4O3L4FFFFE-DL4.CL8E-L1
GP4L8GFGFL4EC"
200 PLAY"T4O3L8EFGFGFEFGAB-AE-AL
4GL8GGL4GL8GGA-L8GGL4G-L8FFE-DCD
L4E-L8E-E-E-DCDL4E-L8CC"
210 PLAY"T4O3L4DP4O3L8GFGFL4ECV>
O2CV<O3L8EFGFGFEFGAB-AB-AL4GL8GG
L4GL8GGL4A-GG-FL8E-DCDL2E-"
220 PLAY"T4O4L4A-GG-FL8GFE-FL2GL
4A-GG-FL8GFE-GL2B-L8E-DCE-L4GBL8
GFGFL4ECO2V>CO4V<L8EFGFGFEFGAB-A
B-AL4B-B-GO5V>L1C"
230 GOTO 230
```

○

Hint ...

This program will give you a small attr demo that changes when you press a key. Iit also tells you the attr setting.

```
1 '*** ATTR DEMO ***
5 CLS
10 FOR X=0TO7
20 FOR S=0 TO 7
30 ATTRX,S
35 PRINT"ATTR ";X;",";S
40 EXEC44539
50 NEXT S
60 NEXT X
```

CHINESE CHECKERS

20K
MC–10

by Chris Deacon

A game for four players. All the instructions are included in the listing. This one will keep you out of mischief for hours. By cutting down on the REMs and paring off the instructions to try to eliminate about 850 characters it should be possible to fit this into 4K.

The Listing CHINESE:

```
0 REM   CHINESE CHECKERS BY
          CHRIS  DEACON
1 REM   ---------------------
5 GOSUB 900:REM FOR 4K DELETE TH
IS LINE AND LINE890 ONWARDS
10 CLS0:CLEAR200:DIMA(54),B$(64)
:P=16383:S=7:X=1:D=1:GOSUB700
30 REM****************************
40 FORC=1TO4:IF P(C)=1 THEN 80
50 K=143+C*16:GOSUB86:GOSUB600
80 U=0:E=0:NEXT:GOTO40
85 REM****************************
86 PRINT@0,CHR$(K);CHR$(K);CHR$(
K);CHR$(K);
90 A$=INKEY$
100 X=X+(A$=("A")ANDX>1)-(A$=("S
")ANDX<64)+(((A$=("W")ANDX>2)*V)
-(A$=("Z")ANDX<63)*V)
125 H=INT(A(X)/32)+1:V=H
130 IFX>36 THENV=-V:I=V+16:V=I
190 POKEP+A(D),128:POKEP+A(X),62
:D=X:IF A$="P" ANDU=1 THENRETURN
200 IF A$<>"M" THEN 90
300 REM****************************
500 E=E+1:K(E)=X:J(E)=H:IF E<2 T
HEN 90
520 E=0:SOUND200,1:A=K(1):B=K(2)
:M=ABS(A(A)-A(B))
525 IF M<>31 AND M<>33 AND M<>62
 AND M<>66 THEN 560
530 IFU=1 AND M<62 THEN 560
535 IF M<62 THEN 550
540 T=ABS(A+B)/2:Q=-1*(J(1)>7 AN
D J(2)>7):IFB$(T+Q)=" "THEN 560
545 GOSUB550:U=1:E=1:K(1)=K(2):J
(1)=J(2):GOTO90
550 IF B$(A)=CHR$(K) AND B$(B)="
 " THEN B$(B)=B$(A):B$(A)=" ":PR
INT@A(B),B$(B);:PRINT@A(A),B$(A)
;:GO=GO+1:RETURN
560 E=-1*(U=1):GOTO90
590 REM****************************
600 FOR F=1 TO 20 STEP 2
610 PO=VAL(MID$(C$(C),F,2))
620 IFB$(PO)<>CHR$(K)THEN RETURN
630 NEXT:P(C)=1:PL=PL+1
640 Q(PL)=K:IF PL<4 THEN RETURN
650 Y=0:FORI=1TO4:Q$=CHR$(Q(I))
660 PRINT@0+Y*32,CHR$(48+I);Q$;Q
$;Q$;:Y=Y+2:NEXT
670 GOTO 670
690 REM****************************
700 B$="1111111111200042000042220
0044220000442200044200004200043333333333"
710 C$(1)="555657585960616263 64"
720 C$(2)="1521272835364243 4954"
730 C$(3)="0102030405060708 0910"
740 C$(4)="1116222329303738 4450"
750 FORI=1TO64:F=VAL(MID$(B$,I,1
)):R=143+16*F:IF F=0 THEN R=32
780 B$(I)=CHR$(R):NEXT:FORI=1TO8
810 FORN=STOS+B:G=N%2:J=G+L*32+1
820 T=T+1:A(T)=J:PRINT@J,B$(T);
830 NEXT:S=S-1:L=L+1:B=B+1:NEXT
840 S=5:B=6:FOR I=1 TO 7
850 FORN=STOS+B:G=N%2:J=G+L*32-I
860 T=T+1:A(T)=J:PRINT@J,B$(T);
870 NEXT:S=S+1:L=L+1:B=B-1:NEXT
880 RETURN
890 REM****************************
900 C=RND(8):CLS0:DIMD$(12)
910 D$(1)="11111":D$(2)="10000":
D$(3)="10001":D$(4)="11110":D$(5
)="11001":D$(6)="10101":D$(7)="1
0011":D$(8)="00001"
920 D$(9)="10010":D$(10)="10100"
:D$(11)="11000":D$(12)="00100"
930 E$(1)="ABBBA":E$(2)="ABDBA":
E$(3)="CCACC":E$(4)="AL_LA":E$(5
)="IJKJI":E$(6)="CEFGC":E$(7)="A
CAJI":E$(8)="ABAHA":GOTO1040
940 FOR L=1 TO LEN(A$)
950 B=VAL(MID$(A$,L,1))
960 FOR T=1 TO 5
970 W=ASC(MID$(E$(B),T,1))-64
980 FOR R=1 TO 5
990 V=VAL(MID$(D$(W),R,1))
1000 IF V=1 THEN SET(X,Y,C)
1010 X=X+1:NEXT:Y=Y+1:X=X-5
1020 NEXT:Y=P:X=X+6:NEXT:RETURN
1040 A$="1346282":X=12:P=4:Y=P:G
OSUB940
1050 A$="13215278":X=9:P=14:Y=P:
GOSUB940
1060 FOR DE=1 TO 2000:NEXTDE
1065 REM****************************
1070 CLS:PRINT@8,"CHINESE CHECKE
RS":PRINT
1080 PRINT"CHINESE CHECKERS IS A
 GAME FOR  FOUR PLAYERS.THE OBJE
CT OF THE"
1090 PRINT"GAME IS TO MOVE YOUR
PIECES TO  THE OPPOSITE SIDE OF
THE BOARD"
1100 PRINT"BEFORE YOUR OPPONENTS
 DO <<EG>> YELLOW TO REDS POSITI
ON          RED TO YELLOWS POSITI
ON"
1110 PRINT"BLUE TO WHITES POSITI
ON","WHITE TO BLUES POSITION"
1120 PRINT"ALL MOVES ARE DIAGONA
L IN ANY   DIRECTION. THE PLAYER
S TURN IS  SIGNIFIED BY THE COLO
UR IN THE  TOP LEFT HAND CORNER
1130 PRINT"   PRESS ANY KEY TO C
ONTINUE";
1140 IF INKEY$="" THEN 1140
1150 CLS:PRINT@8,"CHINESE CHECKE
RS":PRINT
1160 PRINT"TO MOVE YOUR PIECE US
E THE ARROWKEYS TO MOVE THE CURS
OR TO THE"
1170 PRINT"LEFT SIDE OF THE PIEC
E YOU WANT TO MOVE THEN PRESS (M
> THEN MOVETHE CURSOR TO THE SQU
ARE YOU"
1180 PRINT"WANT TO MOVE TO THEN
PRESS (M>."
1185 PRINT"YOU CAN MOVE DIAGONAL
LY UP OR   DOWN ONE LINE OR"
1189 PRINT"YOU CAN JUMP YOUR OWN
 PIECE OR  YOUR OPPONENTS PIECE.
 IF YOU CAN";
1190 PRINT"JUMP AGAIN THEN MOVE
THE CURSOR TO SQUARE YOU WANT TO
 MOVE TO   THEN PRESS (M>."
1200 PRINT"   PRESS ANY KEY TO C
ONTINUE";
1210 IF INKEY$="" THEN 1210
1220 CLS:PRINT@8,"CHINESE CHECKE
RS":PRINT
1230 PRINT"IF YOU CANNOT JUMP AN
Y MORE THENPRESS (P> AND THE GAM
E THEN     PASSES TO THE NEXT PL
AYER"
1240 PRINT"ONCE A PLAYER HAS MOV
ED ALL     THERE PIECES TO THE O
PPOSITE    SIDE OF THE BOARD THE
 GAME THEN"
1250 PRINT"CONTINUES BETWEEN THE
 REMAINING PLAYERS. THE GAME END
S WHEN ALL THE PIECES ARE ON THE
 OPPOSITE  SIDE OF THE BOARD"
1260 PRINT"   PRESS ANY KEY TO S
TART"
1270 IF INKEY$="" THEN 1270
1280 RETURN
```

SQUARE JIG

by Bob Delbourgo

32K ECB GAME

SQUARE JIG IS A cross between the "Tower of Hanoi" and "Shuffle". You are presented with a square picture divided into an 'n' by 'n' grid.

The pieces are shuffled and it is your job to re-organise them by interchanging adjoining pieces of the grid.

The Listing:

```
0 GOTO10
1 '******** SQUAREJG ***********
   ***** BOB DELBOURGO *********
3 SAVE"205G:3":END'1
10 CLS2
20 PRINT@10,STRING$(12,230);:FOR
I=42TO256STEP32:PRINT@I,CHR$(230
)+"square jig"+CHR$(230);:NEXTI:
PRINT@266,STRING$(12,230);
30 FORI=1TO20
40 R1=RND(10):S1=RND(7):R2=RND(1
0):S2=RND(7):IFR2=R1 ANDS2=S1 TH
EN40
50 T1=PEEK(1034+R1+32*S1):T2=PEE
K(1034+R2+32*S2):POKE1034+R1+32*
S1,T2:POKE1034+R2+32*S2,T1:SOUND
RND(255),5:NEXT
60 PRINT@424,"BY  R. DELBOURGO";
:GOSUB520
70 CLS:PRINT"THIS PUZZLE IS A CR
OSS BETWEEN  THE tower of hanoi
AND shuffle."
80 PRINT"YOU ARE PRESENTED WITH
A SQUARE PICTURE DIVIDED INTO AN
 NXN GRID":PRINT"THE GRID PIECES
 ARE SHUFFLED ANDIT IS YOUR JOB
TO REORGANISE    THEM BY INTERCH
ANGING adjoining PIECES OF THE G
RID."
85 PRINT@320,"1. RND GRAPHICS
2. HOUSE       3. GREEK FLAG
4. CARPET      5. DANDELION
6. DOILY       7. CAUSTICS
8. WAVES":PRINT:INPUT"CHOICE #";
C:C=INT(C):IFC<1ORC>8THEN85
90 R=RND(-TIMER)
100 CLS:PRINT"SQUARE SIZE N (4 M
IN, 8 MAX)";:INPUTN:N=INT(N):IFN
<4ORN>8THEN100
110 PRINT:PRINT"THE PICTURE WILL
 NOW BE DRAWN.  TO RECALL IT DUR
ING REORDERING, PRESS KEY 'S'"
120 PRINT:PRINT"TO UNSHUFFLE THE
 PICTURE, MOVE  THE CURSOR WITH
ARROW KEYS AND  PRESS 'U','D','L
' OR 'R' TO     INTERCHANGE THAT
 SQUARE WITH    THE ADJOINING SQ
UARE UP, DOWN,  LEFT OR RIGHT RE
SPECTIVELY.":PRINT@448,"PRESS 'E
' TO RERUN JIGSAW."
130 GOSUB520
140 PMODE1,1:PCLS:SC=RND(2)-1:SC
REEN1,SC:DIMA(16),B(16)
145 ONC GOTO150,550,650,750,850,
950,1000,1050
150 FORI=1TOINT(N/3)
160 LINE(RND(12*N),RND(12*N))-(1
2*N+RND(12*N),12*N+RND(12*N)),PS
ET,B
170 CIRCLE(12+RND(22*N),12+RND(2
2*N)),24*RND(N),4
180 NEXTI:FORI=1TON:PAINT(2+RND(
16*N),2+RND(16*N)),RND(3)+1,4:NE
XTI
190 LINE(24*N,0)-(255,191),PRESE
T,BF
200 LINE(0,24*N)-(24*N,191),PRES
ET,BF
210 LINE(0,0)-(24*N-1,24*N-1),PS
ET,B
220 PCOPY1TO3:PCOPY2TO4
230 SCREEN0,0:PRINT@416,"NOW CHO
OSE YOUR LEVEL OF PLAY   (1 TO 3
, OR HARD TO EASY)";:INPUTL:L=IN
T(L):IFL<1ORL>3THEN230
240 SCREEN1,SC:FORI=1TO2*INT(N/L
)
250 R1=24*RND(N)-24:S1=24*RND(N)
-24:R2=24*RND(N)-24:S2=24*RND(N)
-24:IFR2=R1 ANDS2=S1 THEN250
260 GET(R1,S1)-(R1+23,S1+23),A,G
:GET(R2,S2)-(R2+23,S2+23),B,G:LI
NE(R1,S1)-(R1+23,S1+23),PRESET,B
F:LINE(R2,S2)-(R2+23,S2+23),PRES
ET,BF:PUT(R1,S1)-(R1+23,S1+23),B
,PSET:PUT(R2,S2)-(R2+23,S2+23),A
,PSET:SOUNDRND(255),1
270 NEXTI:GOSUB530
280 SCREEN0,0:I=INT(N/2):J=INT(N
/2):PRINT@480,"  any key to reor
der jigsaw";:PRINT@448,"PRESS 'E
' TO RERUN THE JIGSAW "
290 SCREEN1,SC
300 I$=INKEY$:GOSUB410:IFI$=""TH
EN300ELSEIFI$="S"THEN490
310 IFI$=CHR$(9)THENI=I+1:IFI>N-
1THENI=N-1:SOUND100,1:GOTO300
320 IFI$=CHR$(8)THENI=I-1:IFI<0T
HENI=0:SOUND100,1:GOTO300
330 IFI$=CHR$(94)THENJ=J-1:IFJ<0
THENJ=0:SOUND100,1:GOTO300
340 IFI$=CHR$(10)THENJ=J+1:IFJ>N
-1THENJ=N-1:SOUND100,1:GOTO300
350 IFI$="U"THENIFJ=0THENSOUND50
,1:GOTO300 ELSEL=-24:K=0:GOSUB46
0:GOTO300
360 IFI$="D"THENIFJ=N-1THENSOUND
50,1:GOTO300 ELSEL=24:K=0:GOSUB4
60:GOTO300
370 IFI$="R"THENIFI=N-1THENSOUND
50,1:GOTO300 ELSEK=24:L=0:GOSUB4
60:GOTO300
380 IFI$="L"THENIFI=0THENSOUND50
,1:GOTO300 ELSEK=-24:L=0:GOSUB46
0:GOTO300
390 IFI$="E"THENRUN70
400 GOTO300
410 PUT(24*I,24*J)-(24*I+23,24*J
+23),A,NOT
420 FORT=1TO2:NEXTT
430 PUT(24*I,24*J)-(24*I+23,24*J
+23),A,NOT
440 FORT=1TO100:NEXTT
450 RETURN
460 GET(24*I,24*J)-(24*I+23,24*J
+23),A,G:GET(24*I+K,24*J+L)-(24*
I+23+K,24*J+L+23),B,G
470 PUT(24*I,24*J)-(24*I+23,24*J
+23),B,PSET:PUT(24*I+K,24*J+L)-(
24*I+23+K,24*J+L+23),A,PSET
480 PLAY"T25505CDEFGFEDC":RETURN
490 PMODE1,3:SCREEN1,SC
500 K$=INKEY$:IFK$=""THEN500
510 PMODE1,1:SCREEN1,SC:GOTO300
520 PRINT@486,"any key  to conti
nue";
530 IFINKEY$=""THEN530ELSERETURN
550 SCREEN1,SC:LINE(0,20*N)-(3*N
,18*N),PSET:LINE(24*N,20*N)-(21*
N,18*N),PSET:LINE(3*N,8*N)-(21*N
,18*N),PSET,B
560 LINE(2*N,9*N)-(12*N,2*N),PSE
T:LINE-(22*N,9*N),PSET:LINE(11*N
,5*N)-(13*N,7*N),PSET,B
570 FORI=5TO17STEP6:FORJ=10TO15S
TEP5:LINE(N*I,N*J)-((I+2)*N,(J+2
)*N),PSET,B:NEXTJ,I
580 LINE(8*N,24*N)-(11*N,18*N),P
SET:LINE-(11*N,14*N),PSET:LINE-(
13*N,14*N),PSET:LINE-(13*N,18*N)
,PSET:LINE-(16*N,24*N),PSET
590 LINE(0,0)-(24*N-1,24*N-1),PS
ET,B:PAINT(2*N,22*N),4,4:PAINT(2
2*N,22*N),4,4:PAINT(2*N,2*N),3,4
:PAINT(9*N,11*N),2,4:PAINT(12*N,
21*N),2,4
600 GOTO190
650 SC=0:SCREEN1,0:LINE(N/2,2*N)
-(3*N/2,2*N),PSET:LINE(N,2*N)-(N
,24*N),PSET:LINE(N,4*N)-(2*N,4*N
),PSET:LINE(N,22*N)-(2*N,22*N),P
SET
660 COLOR3:LINE(2*N,4*N)-(23*N,2
2*N),PSET,B
670 FORI=2TO8STEP6:FORJ=4TO10STE
P6:LINE(I*N,J*N)-((I+4)*N,(J+4)*
N),PSET,BF:NEXTJ,I:FORJ=4TO12STE
P4:LINE(12*N,J*N)-(23*N,(J+2)*N)
,PSET,BF:NEXTJ
680 FORJ=16TO20STEP4:LINE(2*N,J*
N)-(23*N,(J+2)*N),PSET,BF:NEXTJ:
FORJ=7TO19STEP4:PAINT(18*N,J*N),
2,3:NEXTJ:GOTO190
750 FORI=8TO24*N STEP32:FORJ=8TO
24*N STEP16:DRAW"C4BM"+STR$(I)+"
,"+STR$(J)+";BR6H8G8F6E8R16;":NE
XTJ,I:LINE(0,0)-(24*N-1,24*N-1),
PSET,B
760 FORI=8TO24*N STEP32:FORJ=8TO
24*N STEP16:PAINT(I,J),2,4:NEXTJ
,I:FORI=24TO24*N STEP32:FORJ=16T
O24*N-8STEP32:PAINT(I,J),3,4:NEX
TJ,I770 GOTO190
```

continued on page 58

JIGSAW

MC-10

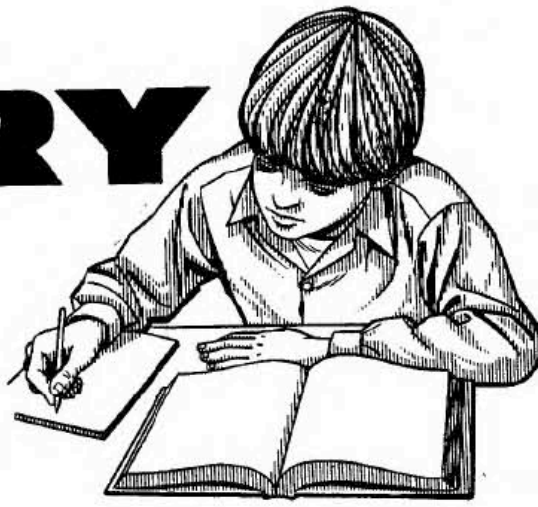
by Chris Deacon

This is quite a clever program in which you are able to feed in a picture of your own chcosing, have it broken up into jigsaw pieces and then you can go ahead and reassemble it. You will need a picture drawn in SG4 or SG6 graphics mode and use Wilson Hinves "Screen Save" program of March '86 CoCo. All instructions are included within the listing.

The Listing JIGSAW:

```
0 REM JIGSAW BY CHRISS DEACON
1 REM ----------------------
10 GOSUB510:CLEAR1500:DIMC$(32),
D$(32):T=1:P=16384
20 PRINT@10,"***JIGSAW***":PRINT
@128,"################################
######"
25 PRINT@160," IS YOUR PICTURE I
N SG4 OR SG6   GRAPHICS MODE PRE
SS '4' OR '6'"
30 PRINT"################################
##########"
40 A$=INKEY$:IF A$="" THEN 40
50 P1=-68*(A$="6"):IF A$<>"4" AN
D A$<>"6" THEN 40
60 CLS:PRINT@10,"***JIGSAW***":P
RINT@128,"################################
###########"
70 PRINT@160,"PLEASE LOAD IN YOU
R PICTURE FROMTAPE THEN GIVE ME
A FEW MOMENTS    TO PROCESS AND
SHUFFLE THE",TAB(12)"PICTURE"
80 PRINT"################################
##########"
100 CLOADM:POKE49151,P1
110 FORV=0TO480STEP128:FORH=0TO3
1STEP4:FORW=0TO3:FORU=0TO3
120 R=H+V+W*32+U
130 C$(T)=C$(T)+CHR$(PEEK(R+P)):
NEXT:NEXT:D$(T)=C$(T):T=T+1:NEXT
:NEXT
140 REM**MOSES OAKFORD SHUFFLE**
150 FORZ=32TO1STEP-1:L=RND(Z):K$
=C$(Z):C$(Z)=C$(L):C$(L)=K$:NEXT
160 REM************************
170 T=1:FORV=0TO480STEP128:FORH=
0TO31STEP4:FORR=0TO3:W=P+H+V+R
180 POKEW,ASC(MID$(C$(T),R+1,1))
190 POKEW+32,ASC(MID$(C$(T),R+5,
1))
200 POKEW+64,ASC(MID$(C$(T),R+9,
1))
210 POKEW+96,ASC(MID$(C$(T),R+13
,1)):NEXT:T=T+1:NEXT:NEXT
220 REM************************
230 X=16:Y=8:X1=X:Y1=Y:Q=16384
240 A$=INKEY$:T1=X/4:T2=Y/4:T=IN
T(T1+T2*8)+1
250 X=X+4*((A$="A"ANDX>0)-(A$="S
"ANDX<27))
260 Y=Y+4*((A$="W"ANDY>0)-(A$="Z
"ANDY<12))
270 POKEQ+X1+Y1*32,ASC(MID$(C$(T
),1,1)):POKEQ+X+Y*32,64
280 X1=X:Y1=Y:IFA$<>"M"THEN240
290 REM************************
300 E=E+1:A(E)=T:B(E)=X+Y*32+163
84:IFE<2THEN240
310 A=A(1):B=A(2):IFA=BTHENE=1:G
OTO240
320 K=B(1):J=B(2):E=0:FORI=0TO3
330 POKEK+I,ASC(MID$(C$(E),I+1,1
))
340 POKEK+32+I,ASC(MID$(C$(B),I+
5,1))
350 POKEK+64+I,ASC(MID$(C$(B),I+
9,1))
360 POKEK+96+I,ASC(MID$(C$(B),I+
13,1)):NEXT:FORI=0TO3
370 POKEJ+I,ASC(MID$(C$(A),I+1,1
))
380 POKEJ+32+I,ASC(MID$(C$(A),I+
5,1))
390 POKEJ+64+I,ASC(MID$(C$(A),I+
9,1))
400 POKEJ+96+I,ASC(MID$(C$(A),I+
13,1)):NEXT
410 G$=C$(A):C$(A)=C$(B):C$(B)=G
$
420 REM************************
430 FORI=1TO32:IFD$(I)<>C$(I)THE
N240
440 NEXT:FORI=1TO6
450 SOUNDRND(255),4:POKE49151,4:
FORDL=1TO90:NEXT:NEXT
460 POKE49151,P1
470 A$=INKEY$:IF A$="" THEN 470
480 IF A$="Y" THEN 150
490 IF A$<>"N" THEN 470
500 END
510 CLS:PRINT@10,"***JIGSAW***":
PRINT
520 PRINT"JIGSAW IS A JIGSAW PUZ
ZLE USING PICTURES DRAW IN SG4 O
R SG6     GRAPHICS MODES.SAVED T
O TAPE"
530 PRINT"USING WILSON HINVES SC
REEN SAVE PROGRAM.TO MOVE PIECES
 AROUND   USE THE ARROW KEYS TO
MOVE THE"
540 PRINT"CURSOR TO THE PIECE YO
U WANT TO MOVE THEN PRESS 'M' TH
EN MOVE   THE CURSOR TO THE PLAC
E YOU WANTIT TO GO THEN ";
550 PRINT"PRESS 'M' AND THE PIEC
ES WILL BE SWAPPED OVER"
560 PRINT:PRINT"    PRESS ANY KEY
 TO CONTINUE"
570 A$=INKEY$:IF A$="" THEN 570
580 CLS:PRINT@10,"***JIGSAW***":
PRINT
590 PRINT"WHEN YOU HAVE SOLVED T
HE PUZZLE THE SCREEN WILL START
TO FLASH  WHEN THE SCREEN HAS ST
OPPED"
600 PRINT"FLASHING PRESS 'Y' TO
RESHUFFLE THE PICTURE OR 'N' TO
END"
610 PRINT:PRINT"    PRESS ANY KE
Y TO START"
620 R=RND(0):IF INKEY$=""THEN620
630 CLS:RETURN
```

YOUR STORY



By Catherine Threlfall

16K CB + optional printer

APPLICATION

WE HAVE HAD our CoCo for around five months now and this Christmas received a TP-10 printer.

After playing around with the printer, I decided that it would be good to have a program that involved both printer and computer.

Well, here it is!!!!!

In this program you answer questions and it all gets put together to make a story. Then your story, as well as your future (it is also a fortune teller) comes out of the printer!!

When typing in this program you can change the fortune by changing the 'IF' lines.

The Listing:

```
0 GOTO10
1 '********** STORY ************
   ***** CATHERINE THRELFALL ***
3 SAVE"187C:3":END
10 PRINT"     YOUR STORY"
20 PRINT"HI,WHAT'S YOUR NAME?"
30 INPUT A$
40 PRINT"MINE'S COCO"
50 FOR X=1 TO 3000:NEXT X
60 CLS
70 PRINT"I'M GOING TO ASK YOU SO
ME QUESTIONS!!"
80 PRINT"AND LATER YOU'LL GET A
PRESENT!!!"
90 PRINT"****NUMBER ONE****"
100 PLAY"T5;L2;C;L4;CC;L2;ECGGGG
"
110 PRINT"WHAT COLOUR ARE YOUR E
YES?"
120 INPUT B$
130 PRINT"WHAT IS YOUR FAVOURITE
 THING?"
140 INPUT C$
150 PRINT"WHAT IS YOUR AGE?"
160 INPUT D$
170 PRINT"SORRY ABOUT ALL THESE
QUESTIONS!!LASTLY,WHAT MONTH WER
E YOU BORN IN?"
180 INPUT Q$
190 IF Q$="JANUARY"THEN E$="A ST
RANGER WILL COME INTO YOUR LIFE"
200 IF Q$="FEBRUARY"THEN E$="THI
S NEXT MONTH WILL BE FUN FOR YOU
"

210 IF Q$="MARCH"THEN E$="YOU WI
LL RECEIVE MANY NEW THINGS"
220 IF Q$="APRIL"THEN E$="YOU WI
LL LEARN A NEW SKILL"
230 IF Q$="MAY"THEN E$="BE CAUTI
OUS OF GRAND PIANOS.THEY ARE OUT
 TO GET YOU!"
240 IF Q$="JUNE"THEN E$="YOU WIL
L MEET A NEW FRIEND"
250 IF Q$="JULY"THEN E$="THE GRE
BILS ARE OUT TO GET YOU.STAY IN
BED FOR THE NEXT MONTH"
260 IF Q$="AUGUST"THEN E$="BEWAR
E!TODAY IS NOT YOUR LUCKY DAY!!!
!!!!!"
270 IF Q$="SEPTEMBER"THEN E$="YO
U HAVE A SECRET ADMIRER!!"
280 IF Q$="OCTOBER"THEN E$="DURI
NG THE NEXT WEEK YOU WILL MAKE M
ANY GREAT ACHIEVEMENTS ON THE CO
MPUTER!!"
290 IF Q$="NOVEMBER"THEN E$="YOU
 WILL MAKE FRIENDS WITH AN ANIMA
L!"
300 IF Q$="DECEMBER"THEN E$="IN
OLD AGE YOU WILL GROW TO LOOK LI
KE FATHER CHRISTMAS.I WONDER WHY
!!!!!!"
310 PRINT#-2,CHR$(27) CHR$(14)
320 PRINT#-2,A$;"'S STORY"
325 PRINT#-2,CHR$(27) CHR$(15)
330 PRINT#-2,"THIS IS A STORY AB
OUT "A$;"."A$;" HAS "B$;" EYES!!
!"
340 PRINT#-2,A$;" LOVES "C$;" AN
D IS "D$;" YEARS OLD"
350 PRINT#-2,CHR$(27) CHR$(14)
360 PRINT#-2,"*YOUR FUTURE*"
370 PRINT#-2,CHR$(27) CHR$(15)
380 PRINT#-2,E$
390 PRINT#-2,CHR$(27) CHR$(14)
400 PRINT#-2,"****THE END****"
```

Hint ...

This is a small program to let you decide on a colour for a picture or whatever. Just input the background colour and then count the screens until you find one you like and jot down the number.

```
1 '*** COCO3 COLOURS ***
2 POKE 65497,0
3 CLS:INPUT"BACKGROUND COLOUR NU
MBER";A
4 PALETTE 0,A
10 HSCREEN 2
20 HCLS0
30 FOR X=1 TO64
40 PALETTE1,X
50 HCOLOR 1
60 HDRAW"BM 190,150 U100L100D100
R100"
70 HPAINT(180,140),1,1
80 EXEC44539
85 HPRINT(0,0),"  "
90 NEXT X
```

GRAPHIC ONE-LINERS

16K ECB GRAPHICS

by Justin Lipton

GRAPHIC ONE-LINERS IS a program that I have been writing for some time. It consists on 13 one-line program with each one creating a different graphic design.

I have called it "Graphic One-linere" and it has a menu to access the various designs through you may wish to run the programs as one liners individually.

Feel free to change variables loop stepping rates and other parts of the program. You may wish to use some of the designs in your own programs.

Have fun.

The Listing:

```
0 GOTO10
1 '********* GRAPHIC ONE-LINERS
   ******* JUSTIN LIPTON *******
3 SAVE"231:3":END'7
10 PMODE 4,1
20 P=3.1415926:P2=P*2:P3=P/2
30 X=128:Y=96
35 PCLS
40 CLS:PRINT @ 3+7*32,"CHOOSE A
NUMBER (1-13)";:INPUT A:IF A>13
OR A<1 THEN 40 ELSE SCREEN 1,1:O
NA GOSUB 60,80,100,120,140,160,1
80,210,230,250,270,290,310
41 A$=INKEY$:IF A$="" THEN 41
45 GOTO 35
60 OX=52:OY=59:R=95:FOR L=1 TO 1
50:Z=RND(0)*P2::NX=R*COS(Z)+X:NY
=R*SIN(Z)+Y:LINE(OX,OY)-(NX,NY),
PSET:OX=NX:OY=NY:NEXT:RETURN
80 Z=P2*RND(0):R=95:CX=R*COS(Z)+
X:CY=R*SIN(Z)+Y:FOR L=1 TO 110:Z
=P2*RND(0):NX=R*COS(Z)+X:NY=R*SI
N(Z)+Y:LINE(CX,CY)-(NX,NY),PSET:
NEXT:RETURN
100 R=95:R2=R^2+1:FOR J=0 TO R S
TEP 5:PX=SQR(R2-J*J):PY=SQR(R2-P
X*PX):LINE(PX+X,PY+Y)-(-PX,PY+Y
),PSET:LINE-(X-PX,Y-PY),PSET:LIN
E-(PX+X,Y-PY),PSET:LINE-(PX+X,PY
+Y),PSET:NEXT:RETURN
120 Z=2:R=0:ZI=.5:RI=.5:C=10.18:
FOR L=1 TO 150:Z=Z+ZI:R=R+RI:NX=
R*COS(Z)+X:NY=R*SIN(Z)+Y:LINE(X,
Y)-(NX,NY),PSET:NEXT:RETURN
140 R1=20:R2=45:R3=115:R4=85:FOR
 L=0 TO P2 STEP P/3:FOR L1 = 0 T
O P2 STEP P/6:X1=R3*COS(L1)+X:Y1
=R4*SIN(L1)+Y:X2=R1*COS(L)+X:Y2=
R2*SIN(L)+Y:LINE(X1,Y1)-(X2,Y2),
PSET:NEXT L1,L:RETURN
160 R1=20:R2=45:R3=115:R4=85:FOR
 L=0 TO P2 STEP P/3:FOR L1=0 TO
P2 STEP P/6:X1=R3*COS(L1)+X:Y1=R
4*SIN(L)+Y:X2=R1*COS(L)+X:Y2=R2*
SIN(L1)+Y:LINE(X1,Y1)-(X2,Y2),PS
ET:NEXT L1,L:RETURN
180 R=95:L=3:FOR J=0 TO P2 STEP
P/100:PX=R*COS(J*L)+X:PY=R*SIN(J
)+Y:LINE(X,Y)-(PX,PY),PSET:NEXT:
RETURN
210 FOR A=1 TO 192:B=SIN(A*6)*6+
100:LINE(A+20,B)-(B+20,A),PSET:N
EXT A:RETURN
230 FOR J=0 TO P2 STEP P/64:R1=9
5:R2=35:R3=110:X1=R3*COS(J)+X:Y1
=R2*SIN(J)+Y:X2=R2*COS(J-P)+X:Y2
=R1*SIN(J-P)+Y:LINE(X1,Y1)-(X2,Y
2),PSET:NEXT J:RETURN
250 OF=P/3:FOR J=0 TO P2 STEP P/
64:R1=95:R2=35:R3=110:X1=R3*COS(
J)+X:Y1=R2*SIN(J)+Y:X2=RS*COS(J)
+X:Y2=R1*SIN(J+OF)+Y::LINE(X1,Y1
)-(X2,Y2),PSET:NEXT J:RETURN
270 OF=PI/3:FOR J=0 TO P2 STEP P
/64:R1=95:R2=35:R3=110:X1=R3*COS
(J)+X:Y1=R2*SIN(J)+Y:X2=R2*COS(J
+OF)+X:Y2=R1*SIN(J)+Y:LINE(X1,Y1
)-(X2,Y2),PSET:NEXT J:RETURN
290 R1=120:R2=30:Y1=40:Y2=152:FO
R J=P TO 3*P STEP P/32:PX=X-R1*C
OS(J):PY=Y1-R2*SIN(J):CX=R1*COS(
J)+X:CY=R2*SIN(J)+Y2:LINE(PX,PY)
-(CX,CY),PSET:NEXT J:RETURN
310 FOR A=1 TO 192:B=EXP(A/36.51
9293):LINE(A+20,B)-(B+20,A),PSET
:NEXT A:RETURN
```

continued from page 22

by the C ITOH 8510 which uses eight dots in a dot-column, so the DATA lines have numbers from 0 to 255. The commands to the printer were also different. I had the program on tape and tried leaving the DATA as it was. I hoped to be able to make the necessary adjustments elsewhere in the program. Guess what? It worked! I got a very reasonable picture of Garfield.

If you have the program and a DMP 110, delete everything (not much) except the DATA lines, and add the following:

```
121 PRINT#-2,CHR$(18):REM GRAP
HICS
122 PRINT#-2,CHR$(27)CHR$(14):
REM ELONGATE
123 FOR X=1 TO 90:READF
124 IF F<128 THEN F=F+128
125 IF F=256 THEN END
126 PRINT#-2,CHR$(F);
127 NEXT X
128 PRINT#-2:GOTO123
```

If you would prefer to give his tail a 'finish' then change the 128's to 192's in line 119. I'll leave it to you to work out why.

continued from page 55

```
850 COLOR3:LINE(11.5*N,12*N)-(12
.5*N,24*N),PSET,BF
860 COLOR2:FORI=1TO60:R=RND(100)
:LINE(12*N,12*N)-(12*N*(1+COS(R)
),12*N*(1+SIN(R))),PSET:R=RND(10
0):LINE(12*N,12*N)-(12*N+6*N*COS
(R),12*N+6*N*SIN(R)),PSET:NEXTI
870 GOTO190
950 FORI=1TO6STEP.5:CIRCLE(12*N,
12*N),I*N,2:NEXTI:FORI=1.047TO6.
29STEP1.047:X=8*N*COS(I)+12*N:Y=
8*N*SIN(I)+12*N:CIRCLE(X,Y),3*N,
2:PAINT(X,Y),3,2
960 FORJ=1.047TO6.29STEP1.047:CI
RCLE(X+3*N*COS(J+I),Y+3*N*SIN(J+
I)),N,4:NEXTJ:NEXTI
970 GOTO190
1000 FORI=12TO12*N STEP8::COLOR2
:LINE(I,0)-(24*N,I),PSET:LINE-(2
4*N-I,24*N),PSET:LINE-(0,24*N-I)
,PSET:LINE-(I,0),PSET
1010 COLOR4:LINE(24*N-I,0)-(0,I)
,PSET:LINE-(I,24*N),PSET:LINE-(2
4*N,24*N-I),PSET:LINE-(24*N-I,0)
,PSET:NEXTI
1020 GOTO190
1050 PI=3.1415927:C=2:FORJ=1TO4:
FORI=4TO24*N STEP4:X=5*J*N+3*N*S
IN(I*J/(PI*3*N)):COLORC:LINE(I,X
)-(I,5*J*N),PSET:NEXTI:C=C+1:IFC
=5THENC=2
1060 NEXTJ:COLOR4:GOTO190
```

SET NUMBERS

MC–10

by David Hill

This is only a short program but it is very interesting to see your selected number graphically formed on the screen. A very good quickie program.

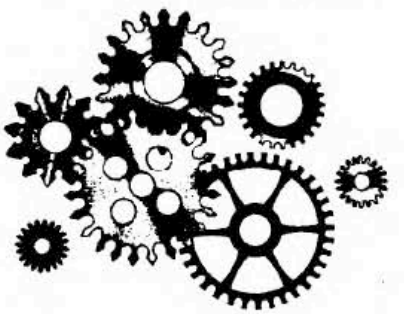
The Listing SETNUMBR:

```
0 REM          SET NUMBERS
               BY CHRIS DEACON
1 REM          -----------
               ---------------
200 CLS0:C=RND(8):Y=8
210 A$(1)="11111":A$(2)="10010":
A$(3)="00001":A$(4)="00010":A$(5
)="00110":A$(6)="10000":A$(7)="1
0001":A$(8)="00111"
220 B$(0)="17771":B$(1)="45448":
B$(2)="13161":B$(3)="13131":B$(4
)="22144":B$(5)="16131":B$(6)="1
6171":B$(7)="17333"
230 B$(8)="17171":B$(9)="17131"
240 PRINT@0,"  TYPE IN A NUMBER
USING NINE":PRINT"          CHARACT
ERS OR LESS"
241 PRINT:PRINT@64,"  THEN PRESS
 ENTER";:INPUTN
242 C$=MID$(STR$(N),2)
245 IF LEN(C$)>9 THEN 240
246 X=32-LEN(C$)*6/2:CLS0
260 FOR I=1 TO LEN(C$)
270 B=VAL(MID$(C$,I,1))
280 FOR T=1 TO 5
290 U=VAL(MID$(B$(B),T,1))
300 FOR R=1 TO 5
310 V=VAL(MID$(A$(U),R,1))
320 IF V=1 THEN SET(X,Y,C)
340 X=X+1:NEXT:Y=Y+1:X=X-5
350 NEXT:Y=8:X=X+6:NEXT:GOTO240
```

COGS

MC–10

by Chris Deacon



A NOTHER DISPLAY of Colour Graphics which rather resembles the name Cogs. A modified version of Bob & Tino Delbourgo's program. The original had 36 pages, this has 18. Chris has also modified Grahame Pollock's page flipping program to flip 18 pages which will reside at the top of the RAM.

The Listing COGS:

```
0 REM   COGS BY BOB & TINO
             DELBOURGO
    MODIFIED BY CHRISS DEACON
    -------------------------
10 CLS:X=27392:CLEAR100,X:X=2739
2:POKE16917,126
20 POKE16918,INT(X/256):POKE1691
9,X-INT(X/256)*256
30 FORZ=XTOX+35:READA:POKEZ,A:NE
XTZ
40 DATA206,64,0,60,206,108,0,166
,0,8,140,144,0,38,7,206,108,0,25
5,107,5,57,255,107,5
50 DATA56,167,0,8,60,140,65,0,38
,225,57
60 PI=3.14159265:FORI=0TO35STEP2
:CLS0
70 FORT=1/11TO2*PI+1/11STEP.2:CC
=COS(T):SS=SIN(T)
80 SET(21+11*CC,16+9*SS,2):SET(4
2-11*CC,16-9*SS,3):SET(5-5*CC,16
-4*SS,4):SET(58+5*CC,16-4*SS,1)
90 SET(21-4*CC,4-3*SS,5):SET(21-
4*CC,28-3*SS,6):SET(42+4*CC,4+3*
SS,7):SET(42+4*CC,28+3*SS,8)
100 NEXTT
110 FORC=0TO3:T=C*PI/4+1*PI/36:T
T=C*PI/4+1*PI/18:FORR=-9TO9:C1=C
OS(T):S1=SIN(T):C2=COS(TT):S2=SI
N(TT)
120 SET(21+R*C1,16+.8*R*S1,C+1):
SET(42-R*C1,16-.8*R*S1,C+5)
130 SET(5-.5*R*C2,16-.4*R*S2,C+5
):SET(58+.5*R*C2,16+.4*R*S2,C+1)
140 SET(21-.4*R*C2,4-.3*R*S2,C+5
):SET(21-.4*R*C2,28-.3*R*S2,C+5)
150 SET(42+.4*R*C2,4+.3*R*S2,C+1
):SET(42+.4*R*C2,28+.3*R*S2,C+1)
160 NEXTR,C:S=1/2+1
170 FORV=0TO15:FORH=0TO31
180 POKE27136+H+V*32+512*S,PEEK(
16384+H+V*32)
190 NEXTH,V,I:DL=30
200 P=USR(0):A$=INKEY$:DL=DL+10*
((A$="A"ANDDL>10)-(A$="S"))
210 FORI=1TODL:NEXT:GOTO200
```

ECHO SONG

16K ECB by Craig Stewart

ECHOSONG is a small experiment using a short sound program that allows the user to input songs and play them so that they sound like they're being played in an echo-chamber.

Although extremely simple in operation (simply play a sound and then play the same sound at a lesser volume afterwards) I found it quite pleasant to listen to - it gives songs a 'grand' touch.

Within the program, I have put several songs in data statements (I really apologize for the songs, but I am not overstocked with music books - I am sure someone else could come up with something much better).

To enter your own songs, put them in data statements with commas between every note and end the song with a "ZZ".

The Listing:

```
0 GOTO5
1 '********** ECHOSONG *********
   ****** CRAIG STEWART ********
2 SAVE"146E:3":END'10
5 CLS3:PRINT@198,"ECHO SONG EXPE
RIMENT";
10 DIM A$(70,3)
15 PLAY"L2":POKE65495,0
20 L(1)=38:L(2)=64
25 READ A$:IF A$="ZZ" THEN CLS:E
ND ELSE PLAY"V31"+A$:IF A$>="A"
AND A$<="G" THENPLAY"V10"+A$:GOT
O 25
30 GOTO 25
35 DATA O2L35,D,G,L25,B,L35,B,A,
L25,G,L35,A,G,E,L10,G
40 DATA L35,G,G,L25,B,L35,G,B,L2
503,D,L3503,C,O2,B,L10,A,L3503,D
,C,O2L25,B,L35,B,A,L25,G,L35,A,B
,O3,D,L10,C,L3502,E,E,L25,D,L35,
F,G,L25,A,L35,B,A,L10,G
45 DATA P1L35,C,E,L25,G,G,G,G,L1
5,G,L3503,C,O2,L25,G,L35,E,L40,F
,L25,G,G,F,D,L10,C,L35,C,E,L25,G
,G,G,G,L15,G,L3503,C,O2L25,G,L35
,E,L40,F,L25,G,G,F,D,L10,C
50 DATA O3L35,C,O2L25,B,A,F,A,F,
L20,G,L35,A,L25,G,O3L35,C,O2,B,L
25,A,F,A,O3L20,C,O2L10,G,L35,C,E
,L25,G,G,G,G,L15,G,L3503,C,L2502
,G,L35,E,F,L25,G,G,F,D,L10,C
55 DATA ZZ
```

INBRIEF

Here's What's Happening

InterTAN News

Well we now have a new Computer Hardware buyer. His name is Farley Bartholomew and he has been with InterTan for quite a few years.

Farley's most recent position with InterTan has been in the Customer Services area of the organisation and he brings to the position a thorough knowledge of the MS DOS and Unix operating environments.

Farley will be heading up some major changes in the way InterTan does its work here in Australia over the coming months.

The first change you will notice will be the reduction in pricing of our major hardware lines.

Expect us to be even more competitive in the future!

First prices to fall will be the T1000 EX which goes from $1499 to $1299, and the T1000 SX which goes from $2299 to $1999!

More are to follow - so keep your eyes open - we intend to be the company most Australians shop with for their computer software and hardware this year - and with prices like these, and service like ours, we think we can achieve it!

Just released this month is an upgrade for Tandy 2000 MS DOS owners.

The new DOS, V2.11.03 is now available and makes the T2000's DOS more compatible with the DOS in the other MS DOS computers in our range.

If you own a T2000, please see your local Tandy shop for more details!

By Wilfred Eggert

AND NOW, THE GOLDLINK MODEMS!

The Goldlink On Board Modem uses the international V21 or V23 communications standards to obtain reliable 300 or 1200 baud transmission even over poor quality connections on the public switched telephone network.

This modem is based on the technology and design expertise first used in Australia's first microprocessor controlled modem, the Datasat V2123A.

Additional features of the Goldlink modem include auto dialing, auto answering, auto disconnect and compatability with the industry standard Hayes command set for microprocessor controlled modems.

The modem comes complete with VTEX2 comunications software, an easy to use data communications package for V21/23 modems.

One of the most powerful features of this software is the macro command which allows the user to save a series of keystrokes or functions to a sub-menu, reducing the tedium and time taken on line.

You can preprogram VTEX2 to autodial, auto log on, and either save the entire session to disk, or print it on an attached printer.

The Coms software also supports 300 baud communications, ASCII, telesoftware and X-Modem protocols, all 8 colours on a standard colour graphics card, automatic upload and download at 1200 baud, and access of a PC by remote control.

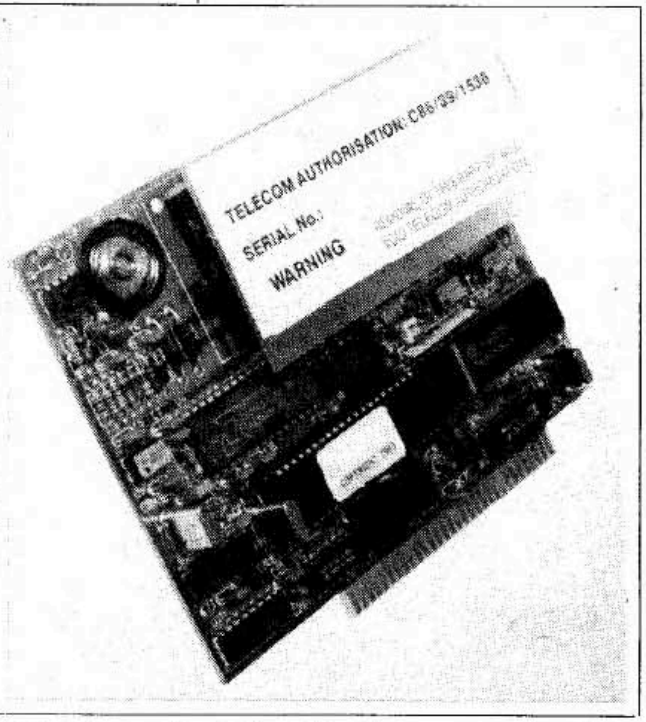
The modem is available from Goldsoft and its distributors for $555, including software.

Telgraph goes OUT!

Adam King, owner of Telgraf, seems to have disappeared!

Funny that really - it seems he owes a lot of people a lot of money!

A recent article in Computing Australia put his debts at $300,000!



SUBMITTING YOUR WORK

Ah! So you've finally finished that program? And you say to yourself, "What a great program that would make for CoCo Magazine/Softgold Magazine!"

And so you wonder to yourself, "How am I going to send this program in to the magazine?". Some time goes by and you suddenly realise, "Hey, there's an article in this month's magazine about submitting your work. I'll read through that and maybe that'll help me."

So you rip the magazine out of your stack of other CoCo/Softgold magazines and read the article on how to submit your program.

It reads ...

" ... we accept programs stored on both tape and disk ONLY along with a hard copy of the program(s) (optional only; we use it here as a reference to see what the program is/does) and suitable instructions.

Saving to Tape

Each program would be best saved three times with the last save being in ASCII. The tapes we recommend you use are either a C30 or less (the reason for that is that tapes longer than C30 have a tendancy to tear).

It'd be even better if you could include some instructions along with the program, either as a seperate program or in the wordprocessors listed below.

Saving to Disk

With disk, you'd be best to save it three times with the last save being in ASCII. Also, the extension name for the second and third copy should be different, so to distinguish the three copies. A simulation is given below.

' ... I have just saved 3 copies of a program called "HORSE". The directory listing would be:

```
HORSE  BAS  0 B 3
HORSE    1  0 B 3
HORSE    2  0 A 3'
```

Any instructions could be saved in the same system using either a program or in the wordprocessors listed below.

Wordprocessors we use.

Here is a list from our most preferable worprocessors to the drastic measure one could take to tell us how your program works.

1. Telewriter/Telepatch
2. Scripsit
3. PenPal
4. VIP Writer
5. Any form of data file.
6. Instructions written in a seperate program."

"Oh wow!", you think to yourself as you read it with awe and astonishment. So you go about your busy little way saving your program and instructions to tape or disk. Then you say to yourself, "Where do I send it?"

You read the article on ...

" ... any articles and programs should be sent to this address:

Submissions Editor,
Freepost 5
PO Box 1742,
Southport, Qld, 4215

All mail to this address need not be paid for.

All tapes and disks received will be returned after three months in case we need to refer to something or re-print something."

So place your tape/disk along with your hardcopy of the listing in a postpack (or suitable wrapping) and pop it in the mail.

All done!!

WHAT'S ON THE BEST OF CoCoOz

Best of CoCoOz #1. EDUCATION

ROADQUIZ ..... ROB WEBB
SHARE MARKET ..... ALEPH DELTA
HANGMAN ..... ALEPH DELTA
AUSTQUIZ ..... P. THOMAS
ALPHABET ..... ROB WEBB
SPELLING TUTOR..... IAN LOBLEY
TANK ADDITION ..... DEAN HODGESON
FRACTION TUTOR ..... ROBBIE DALZELL
TABLES ..... BARRIE GERRAND
ICOSA ..... BOB WALTERS
KIDSTUFF ..... JOHANNA VAGG
TAXMAN ..... TONY PARFITT
FLAGQUIZ ..... ROB WEBB

Best of CoCoOz #2 part 1 16K GAMES

PYTHON ..... W.ARMSTRONG
COCOMIND ..... STEVE COLEMAN
POKERMCH ..... GRAHAM & MATTHEWS
OILSLICK ..... JEREMY GANS
SPEEDMATHS ..... DEAN HODGRSON
CCMETEOR ..... BOB THOMSON
BATTACK ..... JEREMY GANS
SKIING ..... JOSHUA GANS
PROBDICE ..... BOB DELBOURGO
RALLY ..... TONY PARFITT
CHECKERS ..... J & J GANS
FOURDRAW ..... JOHANNA VAGG

Best of CoCoOz #2 part 2 32K GAMES

TREASURE ..... DAVIDSON & GANS
SHOOTING GALLERY ..... TOM DYKEMA
MASTERMIND ..... GRAHAM JORDAN
GARDEN OF EDEN ..... DAVE BLUHDORN
ANESTHESIA ..... MIKE MARTYN
YAHTZEE ..... KEVIN GOVAN
OREGON TRAIL ..... DEAN HODGSON
BATTLESHIP ..... CHRIS SIMPSON
ADVENTURE + ... STUART RAYNER
ANDROMEDIA ..... MAX BETTRIDGE
LANDATTACK ..... ALDO DEBERNADIS

Best of CoCoOz #3 UTILITIES

SCREEN PRINT ..... TOM DYKEMA
RAMTEST ..... TOM DYKEMA
PRINT SORT ..... PAUL HUMPRIES
BEAUTY ..... BOB THOMPSON
DATAGEN ..... ROBIN BROWN
FCOPY ..... BRIAN DOUGAN
FASTEXT ..... OZ-WIZ
MONITOR + ... BRIAN FERGUSON
COPYDIR ..... THOMAS SZULCHA
LABELLER ..... FRED BISSELING
SPEED CONTROL ..... PAUL HUMPRIES
2BC ..... WARREN WARNE
CREAT-A-TITLE ..... BRIAN FERGUSON
DISKFILE ..... BRIAN DOUGAN
BIG REMARKS ..... BOB THOMSON
LABELLER ..... GORDON BENTZEN
DIR ..... MORRIE SINGER
HI ..... ALEX.HARTMANN

Best of CoCoOz #4 Business

HI ..... ALEX. HARTMANN
(disk; Disk Directory Manager)
PERSMAN ..... PAUL HUMPHREYS
(Personal Finance Management)
BANKSTAT ..... BARRY HATTAM
(Annual & Store Statement)
CC5 ..... GRAHAM MORPHETT
(tape; Sales Invoicing)
INSURE ..... ROY VANDERSTEEN
(Analyse Home Contents)
COCOFILE ..... BRIAN DOUGAN
(tape; database)
DPMS ..... PAUL HUMPREYS
(disk; Disk Program Management Sys)
DATABASE ..... PAUL HUMPREYS
(tape; THE tape database)
RESTACC ..... DUNG LY
(tape; Restaurant Accounts)
SPDSHEET ..... GRAHAM MORPHETT
(disk; 22 column spreadsheet)
PRSPDSHT ..... GRAHAM MORPHETT
(disk; prints out "SPDSHEET")
ACS3 ..... GREG WILSON
(disk; Multi disk database)

Best of CoCoOz #5 ADVENTURES

ADV 32K ..... S. RAYNER
QUEST ..... TONY PARFITT
LABYRINTH ..... JAMES REDMOND
ADV + ... SEAN LOWE
CRYSTAL ..... C & K SPRINGETT
PRISON ..... TIM ALTON
OPALTON ..... IAN CLARKE
WIZARD ..... DARRELL BERRY
TREASURE ..... C. DAVIDSON
LOST ..... ALEX. HARTMANN

Best of CoCoOz #6 PRESCHOOL

ALPHABET ..... STUART DAWSON
HATDANCE ..... JOHANNA VAGG
AUSTSONG ..... McDERMOTT FAMILY
ADVANCE .....McDERMOTT FAMILY
WALTZING ..... McDERMOTT FAMILY
TIMEKANG ..... McDERMOTT FAMILY
BAND ..... McDERMOTT FAMILY
KIDSTUFF ..... JOHANNA VAGG
MATCHER ..... ?
LETTERS ..... JACK PINNEN
BABYSIT ..... JOHANNA VAGG
SPELLING ..... JOHANNA VAGG
SPEEDTAB ..... DEAN HODGSON
10 FACES ..... JOHANNA VAGG

Please Note : Some of the programs on Best of Cocooz # 3 and #4 will not work on the Coco 3.

Best of CoCoOz #7 GRAPHICS

LIL'COCO ..... ANDREW WHITE
THE ROOM ..... HERMANN FREDRIKSON
BACK STREET ..... JOY WALLACE
LOCO ..... MIKE D'ESTERRE
COCO ART ..... SANDY McGREGOR
KANGA ..... JOHANNA VAGG
THE BOAT ..... SANDY McGREGOR
SAD COCO ..... P. BOLLE
TOWER ..... C.A.SYMS
WINDY DAY ..... SARAH LAW
SAILING ..... STEVE YOUNGBERRY
OUTHOUSE ..... STEVE YOUNGBERRY
SMURF ..... JOHANNA VAGG
SUNSTATE ..... STEVE YOUNGBERRY
HELICOPTER ..... ANDREW WHITE
MARTHA ..... ANDREW WHITE
BAD MOON ..... STEVE YOUNGBERRY
MCC ..... JOY WALLACE
EAGLE ..... ?
BLASTER ..... PAUL YOULD
FOGHORN ..... PAUL STEVENSON

Best of CoCoOz #8 16K GAMES

ALIEN ..... STUART SANDERS
QWERL ..... DARRELL BERRY
SHOOTOUT ..... CRAIG STEWART
SHUTTLE ..... CRAIG STEWART
FROG ..... DARREN OTTERY
FROGRACE ..... TOM LEHANE
KIMMAT ..... TOM LEHANE
GRANDPRI ..... DOUG GREY
WATER WARS ..... JUSTIN LIPTON
CATERPILLER ..... JUSTIN LIPTON
DETECTIVE ..... VAL STEPHEN
BREAKOUT ..... WHY/BILT

Best of CoCoOz #9 32K GAMES

TRIOMINO ..... BOB DELBOURGO
MATCHEM ..... CHARLES BARTLETT
GO ..... BOB DELBOURGO
NARZOD ..... MAX BETTRIDGE
CHOMPER ..... MAX BETTRIDGE
POPBALL ..... MAX BETTRIDGE
LUDO ..... WHY/BILT
SABRE ..... ANDREW SIMPSON
MOVEABOUT ..... KEVIN GOVAN
JIGSAW ..... JAMES REDMOND
LABYRINTH ..... JAMES REDMOND
TANK ..... CRAIG STEWART

Best of CoCoOz #10 Education II

METEOR ..... DEAN HODGSON
DRIVERS TEST ..... ANDREW SIMPSON
SALE ..... JUSTIN LIPTON
TABLES ..... PAT KERMODE
OPALTON ..... IAN CLARKE
CAPITAL LETTERS ..... BOB HORNE
TEST MATCH ..... JEFF SHEEN
SENTENCE ENDINGS ..... BOB HORNE
ESCAPE ..... DEAN HODOSON
RAILMATH ..... BOB HORNE
COUNTDOWN ..... DEAN HODOSON
WHATZIT ..... BOB HORNE
HOMOPHONES ..... BOB HORNE
COMPOUND WORDS ..... BOB HORNE

Best of CoCoOz #11 Education III
This is a DISK only issue!!

CHATWIN MANOR ..... BOB HORNE

TAPE $16 each

DISK $16 each

GOLDSOFT

P.O. BOX 1742, SOUTHPORT. QLD. 4215 Phone (075) 510 015

Goldsoft Price list as at March, 1987 Please tick (✓) your requirements.

Magazines, Tapes & Disks

Australian CoCo (Advanced Programs for your CoCo):

Magazines:	Tape ( ) or Disk ( )
12 Months $39.95 ( )	12 Months $123.75 ( )
6 Months $24.95 ( )	6 Months $ 74.25 ( )
1 Month $ 4.50 ( )	1 Month $ 16.50 ( )

Softgold (Programs for your CoCo):

Magazines	Tape ( ) or Disk ( )
12 Months $39.95 ( )	12 Months $123.75 ( )
6 Months $24.95 ( )	6 Months $ 74.25 ( )
1 Month $ 4.50 ( )	1 Month $ 16.50 ( )

Gold Disk - Available Quarterly:
1 Month: $16.00 ( )

BACK ISSUES
Australian CoCo: Sep 84 - Dec 85: $2.00 ea ( )
Australian CoCo: Jan 86 - Feb 87: $3.75 ea ( )
Australian Mico: Aug 84 - Dec 85: $2.00 ea ( )

ADDITIONAL REQUIREMENTS

.....

.....

.....

.....

New Subscription: ( ) Renewal: ( )

Sub No: .....

Name: .....

Address: .....

.....

.....P/Code.....

Phone: (....) .....

Please find enclosed:
a. Cheque ( )
b. Money Order ( )
c. Credit Card ( )

Credit Card Type & Number:

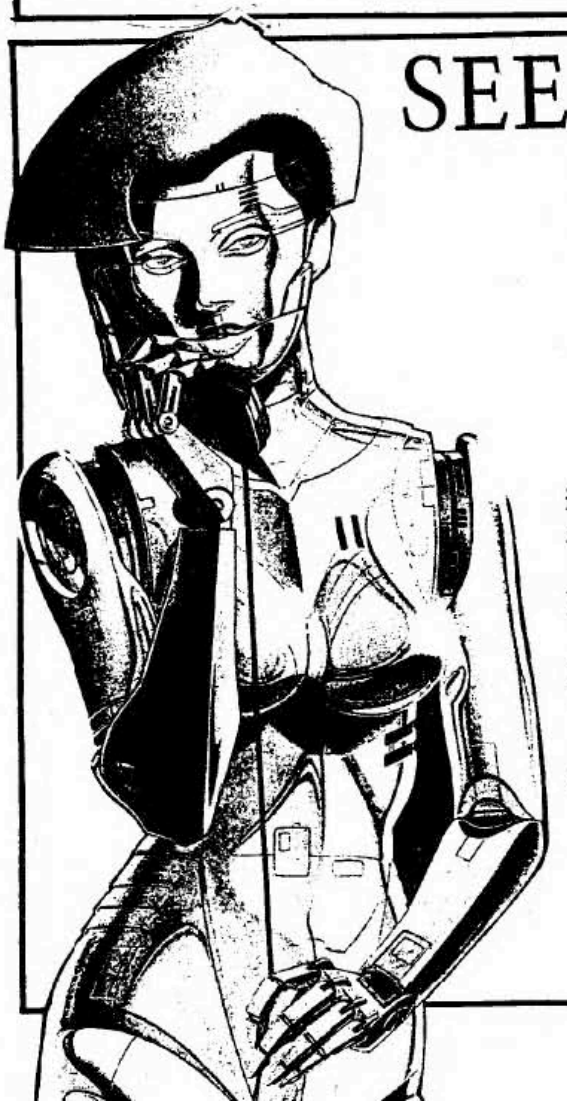
Bankcard ( ) Mastercard ( ) Visa ( )

.....

Expiry Date: ...../.....

Authorised Amount: $.....

Signed: .....



SEEN GOLDLINK YET?

You can only access GOLDLINK on VIATEL if you have a videotex terminal program and a modem capable of operating at 1200/75 baud.

Now Goldsoft presents two great specials!

1 CoCo Owners: Modem, CoCotex Software and cable $289.00

2 TANDY 1000 or IBM PC Owners: Modem, VTex Software and cable $399.00

GOLDSOFT
PO BOX 1742
SOUTHPORT QLD 4215
(075) 51–0577

(Stop between numbers = b.h. else a.h.; but, hyphen between = both)

User Contacts

ACT:

CANBERRA NTH	JOHN BURGER	062 58 3924
CANBERRA STH	LES THURBON	062 86 9226

NSW:

SYDNEY:

BANKSTOWN	PAT DORSETT	02 646 3619
BLACKTOWN	KEITH GALLAGHER	02-627-4627
CARLINGFORD	ROSKO MCKAY	02 624 3353
CHATSWOOD	BILL O'DONNELL	02 419 6081
COLYTON	HERMAN FREDRIKSSON	02 623 6379
FAIRFIELD	ARTH PITTARD	02 72 2881
GLADESVILLE	MARK ROTHWELL	02 817 4627
HILLS DIST	ARTHUR SLADE	02 622 8940
HORNSBY	ATHALIE SMART	02 848 8830
INGLEBURN	STEPHEN RIDGEWAY	02 605 7382
KENTHURST	TOM STUART	02 654 2178
LEICHHARDT	STEVEN CHICOS	02 560 6207
	or GORGE ECHEGARAY	02 560 9664
LIVERPOOL	LEONIE DUGGAN	02-607-3791
MACQUARIE FIELDS		
	BARRY DARNTON	02 618 1909
MINTO	GRAHAM POLLOCK	02 603 5028
SUTHERLAND	IAN ANNABEL	02 528 3391
SYDNEY EAST	JACKY COCKINOS	02 344 9111
ALBURY	RON DUNCAN	060 43 1031
ARMIDALE	DOUG BARBER	067 72 7647
BLAXLAND	BRUCE SULLIVAN	047 39 3903
BROKEN HILL	TERRY NOONAN	080 88 2382
CAMDEN	KEVIN WITTERS	046.66.8068
COFFS HARBOUR	BOB KENNY	066 51 2205
COOMA	ROSS PRATT	064 52 3065
COORANBONG	GEORGE SAVAGE	049 77 1054
COOTAMUNDRA	CHERYL WILLIS	069 42 2264
DENILIQUIN	WAYNE PATTERSON	058 81 3014
DUBBO	GRAEME CLARKE	068 89 6549
FORBES	JOHANNA VAGG	068 52 2943
GOSFORD	PETER SEIFERT	043 32 7874
GRAFTON	PETER LINDSAY	066 42 2503
GUYRA	MICHAEL J. HARTMANN	067 79 7547
JUNEE	PAUL MALONEY	069 24 1860
KEMPSEY	RICK FULLER	065-62-7222
LEETON	BRETT WALLACE	069-53-2081
LISMORE	ROB HILLARD	066 24 3089
LITHGOW	DAVID BERGER	063 52 2282
MAITLAND	BILL SNOW	049 66 2557
MOREE	ALF BATE	067 52 2465
MUDGEE	BRIAN STONE	063-72-1958
NAMBUCCA HDS	WENDY PETERSON	065 68 6723
NARROMINE	GRAEME CLARKE	068 89 6549
NEWCASTLE	LYN DAWSON	049 49 8144
NOWRA	ROY LOPEZ	044 48 7031
PARKES	DAVID SMALL	068 62 2682
PORT MACQUARIE	RON LALOR	065 83 8223
SPRINGWOOD	DAVID SEAMONS	047 51 2107
TAHMOOR	GARY SYLVESTER	046 81 9318
UPPER HUNTER	TERRY GRAVOLIN	065 45 1698
URALLA	FRANK MUDFORD	067 78 4391
WAGGA WAGGA	CES JENKINSON	069 25 2263
WYONG	JOHN WALLACE	043 90 0312

NT:

DARWIN	BRENTON PRIOR	089.81.7766

QLD:

BRISBANE:

BIRKDALE	COLIN NORTH	07 824 2128
CLAYFIELD	JACK FRICKER	07 262 8869
COLL'WOOD PK	ANDREW SIMPSON	07 288 5206
IPSWICH	NICK MURPHY	07 271 1777
PINE RIVERS	BARRY CLARKE	07 204 2806
SOUTH WEST	BOB DEVRIES	07 372 7816
SANDGATE	MARK MIGHELL	07 269 3846
SCARBOROUGH	PETER MAY	07 203 6723
WOODRIDGE	ALLAN ALLSOP	07 349 1831
AIRLIE BEACH	GLEN EVANS	079 46 1264
BIGGENDEN	ALAN MENHAM	071 27 1272
BOWEN	TERRY COTTON C/O	077 86 2220
BUNDABERG	RON SIMPKIN	071 71 5301
CAIRNS	JEFF LARSEN	070 54 7127
DALBY	MERRICK TANSKY	074.62.3228
GLADSTONE	CAROL CATHCART	079 78 3594
GOLD COAST	GRAHAM MORPHETT	075 51 0577
GYMPIE	BERT LLOYD	071 8219100
HERVEY BAY	LESLEY HORWOOD	071 22 4989
MACKAY	LEN MALONEY	079511333x782
MARYBOROUGH	JOHN EFFER	071 21 6638
MT ISA	JACK RAE	077 43 3486
MURGON	PETER ANGEL	071 68 1628
ROCKHAMPTON	KEIRAN SIMPSON	079 28 6162
TARA	DEBBIE DORFIELD	074 65 3177
TOOWOOMBA	LEN GERSEKOWSKI	076 35 8264
TOWNSVILLE	JOHN O'CALLAGHAN	077 73 2064

SA:

ADELAIDE	JOHN HAINES	08 278 3560
NORTH	STEVEN EISENBERG	08 250 6214
MORPHETTVALE	KEN RICHARDS	08 384 4503
PORT NOARLUNGA	ROB DALZELL	08 386 1647
SEACOMBE HTS	GLENN DAVIS	08 296 7477
PORT LINCOLN	BILL BOARDMAN	086 82 2385
PORT PIRIE	VIC KNAUERHASE	086 32 1230
WHYALLA	MALCOLM PATRICK	086 45 7637

TAS:

DEVONPORT	JEFF BEST	004 24 6759
HOBART	BOB DELBOURGO	002 25 3696
KINGSTON	VIN DE PUIT	002 29 4950
LAUNCESTON	BILL BOVER	003 44 1584
SMITHTON	HARRY CHRISAFIS	004-52-1590
WYNYARD	ANDREW WYLLIE	004 35 1639

VIC:

MELBOURNE:

MELBOURNE CCC	JOY WALLACE	03 277 5182
DANDENONG	DAVID HORROCKS	03 707 5870
DONCASTER	JUSTIN LIPTON	03 857 5149
FRANKSTON	BOB HAYTER	03.783.9748
NARRE WARREN	LEIGH BANES	03 704 6680
NTH EASTERN	PETER WOOD	03 435 2018
MELTON	MARIO GERADA	03 743 1323
RINGWOOD	IVOR DAVIES	03 758 4496
SUNBURY	JACK SMIT	03.744.1355
SUNSHINE	IAN BUTTRISS	03 314 3240
UPR F'TREE GLY	RORY DOYLE	03 758 2671
BAIRNSDALE	COLIN LEHMANN	051 57 1545
BALLARAT	MARK BEVELANDER	053 32 6733
CHURCHILL	GEOFF SPOVART	051 22 1389
DAYLESFORD	DANNY HEDJI	054 24 8329
GEELONG	DAVID COLLEN	052 43 2126
MAFFRA	MAX HUCKERBY	051 45 4315
MOE	JOSEPH HESTER	051 27 7817
MORNINGTON	MICHAEL MONCK	03 789 7997
MORWELL	GEORGE FRANCIS	051 34 5175
SALE	BRYAN McHUGH	051 44 4792
SHEPPARTON	ROSS FARRAR	058 25 1007
SMYTHESDALE	TONY PATTERSON	053 42 6815
SWAN HILL	BARRIE GERRAND	050.32.2838
TONGALA	TONY HILLIS	058 59 2251
TRARALGON	LEIGH DAWES	051 74 5552
WONTHAGGI	LOIS O'MEARA	056 72 1593
YARRAWONGA	KEN SPONG	057 44 1486

WA:

PERTH	IAIN MACLEOD	09 446 2136
GIRRAWHEEN	HANK VILLEMSEN	09 342 7639
KALGOORLIE	TERRY BURNETT	090.21.5212

CANADA - CoCo:

Ontario	Richard Hobson	416 293 2346
Toronto	Franz Lichtenberg	416 845 2889

Special Interest Groups

TEACHERS' INTEREST GROUP

BRISBANE	BOB HORNE	07 281 8151

BUSINESS:

BRIZBIZ	BRIAN BERE-STREETER	07 349 4696

OS9 GROUPS:

NATIONAL OS9 USERS' GROUP

	GRAEME NICHOLS	02 451 2954

NSW

SYDNEY

BANKSTOWN	CARL STERN	02 646 3619
CARLINGFORD	ROSKO MCKAY	02 624 3353
GLADESVILLE	MARK ROTHWELL	02 817 4627
SYDNEY EAST	JACKY COCKINOS	02.344.9111
COOMA	FRED BISSELING	064 52 3263

QLD

BRISBANE	JACK FRICKER	07 262 8869

VIC

LATROBE VLY	GEORGE FRANCIS	051 34 5175

WA

KALGOORLIE	TERRY BURNETT	090.21.5212

MC-10 CONTACTS:

LISMORE	BOB HILLARD	066 24 3089
SYDNEY	GRAHAM POLLOCK	02 603 5028
WARRNAMBOOL	GARY FURR	055 62 7440

TANDY 1000 / MS DOS:

NSW:

GLADESVILLE	MARK ROTHWELL	02 817 4627
SYDNEY WEST	ROGER RUTHEN	047.39.3903
WYONG	JOHN WALLACE	043 90 0312

QLD:

BRISBANE

NORTH	BRIAN DOUGAN	07 30 2072
SOUTH	BARRY CAVLEY	07 390 7946
GOLD COAST	GRAHAM MORPHETT	075 51 0577

SA

PORT LINCOLN	BILL BOARDMAN	086 82 2385

VIC:

MELBOURNE	TONY LLOYD	03 882 4664

FORTH:

SYDNEY	JOHN REDMOND	02 85 3751

ROBOTICS:

GOLD COAST	GRAHAM MORPHETT	075 51 0577
SYDNEY	GEOFF FIALA	02 84 3172
WAGGA WAGGA	CES JENKINSON	069 25 2263

CHRISTIAN USERS' GROUP:

COLLIE	RAYMOND L. ISAAC	097 34 1578

300 BAUD BULLETIN BOARDS

SYDNEY:

INFOCENTRE	02 344 9511
TANDY ACCESS	02 625 8071
THE COCOCONNECTION	02 618 3591
HUB	002 49 4405

VIDEOTEX SYSTEMS

VIATEL	01955
MOUSETEX	059 42 5528
VTX 4000	03 741 3295

TANDY INFO ON VIATEL

GOLDLINK	VIATEL	*642#
BLAXLAND COMPUTER SERVICES	VIATEL	*64263#
PARIS RADIO	VIATEL	*64268#
POWER CODE	VIATEL	*64265#
TANDY	VIATEL	*64261#

SOME TANDY USERS ON VIATEL

ALLAN BEALE	726353300
FRED BISSELING	648232630
JACK FRICKER	726288690
JOHN GRIGSBY	945872030
STUART HALL	939765790
BOB KENNY	665122050
JEFF LARSEN	705471270
IAIN MACLEOD	944821360
CHRIS NAGLE	689523360
RICHARD PANKHURST	280717870
ROSS PRATT	648230650
RICCAY SCHMAHL	298151500
ARTHUR SLADE	262289400
DARCY O'TOOLE	755105770
RON WRIGHT	352924510

DIRectory

Insertions in this Directory cost $160.00 for six months or $300.00 for twelve months per frame. Changes to Insertions incur a further charge.

If you sell Soft or Hardware for Tandy computers, you need to be listed in this quick reference guide.

Remember! Tandy owners READ this magazine!

N.S.W. Central Coast

Computer Wizardry
P.O. Box 979,
Gosford N.S.W. 2250

- ★ *Educational Software*
- ★ *Communicating Software Hardware*
- ★ *Agents for Computer Hut*
- ★ *Agents for Speech Systems*
- ★ *Prompt, Courteous Service*
- ★ *Phone or Write for Catalogue*

Bankcard & Visa Card Welcome

043-24-7293

N.S.W. Gunnedah

Esther's Sports & Electronics
166 Conadilly St.,
Gunnedah N.S.W. 2380
(Tandy Dealer 9223)

Agricultural Computing Specialists
For Friendly Service to the man on the land, or for fast accurate help to the town dwellers

067-42-2230

N.S.W. Lismore

Decro Electronic Services
12 Carrington St.,
Lismore, N.S.W. 2480
(Tandy Dealer 9225)

Best range of Computers and Computing Equipment in Summerland.
Whether you live on the North Coast, or are just on holidays, you can't afford not to call and see us!

066-32-1896

South Australia Morphettvale

NATIONAL
1stTIME ADVERTISED
THE PROFIT POTENTIAL IN YOUR PERSONAL COMPUTER
$25,000 PER MONTH IS POSSIBLE
For FREE Brochure
Ph (08) 382.7281
or send SSAE to
Mal. P. Bailey,
6 Bower Crt,
(Dept.7) Morphettvale
South Australia 5162

Victoria Blackburn

D & L Wilson & Co Pty. Ltd.
6 Stafford St.,
Blackburn, Vic. 3130

Serving Melbourne's East
Software — Hundreds of titles
Hardware — Drives, Printers
Service — Upgrades

03-898-4521

Tasmania Hobart

The Delbourgos.
15 Willowdene Ave.,
Sandy Bay
Hobart. Tas. 7005

- ★ *Expanded Basic — a better Basic for your CoCo*
- ★ *The Proportioner — a utility to provide equal gaps between proportional letters on Tandy's DMP200 printer*
- ★ *Mathematical function database*

002-25-3896

MORE GAMES

BEST OF CoCo OZ #8

16K Games

ALIEN	KIMMAT
QWERL	GRANDPRI
SHOOTOUT	WATERWAR
SHUTTLE	CATERPIL
FROG	DETECT
FROGRACE	BREAKOUT

BEST OF CoCo OZ #9

32K Games

TRIOMINO	LUDO
MATCHEM	SABRE
GO	MOVEABOUT
NARZOD	LABYRINT
CHOMPER	JIGSAW
POPBALL	TANK

PRICE — Tape $10.00, Disk $16.00

GOLDSOFT. P.O. BOX 1742,
SOUTHPORT, 4215.

Queensland Brisbane

Queensland Colour Software Supplies
P.O. Box 306
Clayfield Qld. 4011

- ☆ *64k &128K upgrades*
- ☆ *80 column cards*
- ☆ *Y cables*
- ☆ *Games*
- ☆ *Terminal programs*

07 - 262 - 8869
A/H

CANADA

Computer Assembly Manuals
BIG BLUE SEED for IBMtm BUILDERS
* parts list
* placement diagrams
* instructions
for assembling over 75 bare IBM-compat. cards. Now includes guides for 640K, Turbo & AT MthBds!
$17.95 US

Money Order, VISA/MC
NuScope Associates, 1C
P.O. Box 742, Stn B
Willowdale, Ontario

SOFTGOLD MAGAZINE
Registered by Australia Post —
Publication No. QBG 4009
AUSTRALIAN CoCo
Publication No. QBG 4007
P.O. BOX 1742
SOUTHPORT, QLD. Australia. 4215

POSTAGE
PAID
AUSTRALIA

GOLDLINK COM. STATION 692 ON

Telecom VIATEL®
AUSTRALIA'S NATIONAL VIDEOTEX SERVICE

BULLETIN BOARDS
TANDY COMPUTERS
ATARI COMPUTERS
COMMODORE COMPUTERS
FAST FLORIST
REVIEWS
HARDWARE & SOFTWARE SHOP

YES WE EVEN TALK BACK !!